

THE ARCHITECT & BUILDING NEWS

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- REPORT ON TROPICAL ARCHITECTURE
CONFERENCE

APRIL 16, 1953

• VOL. 203

• NO. 16

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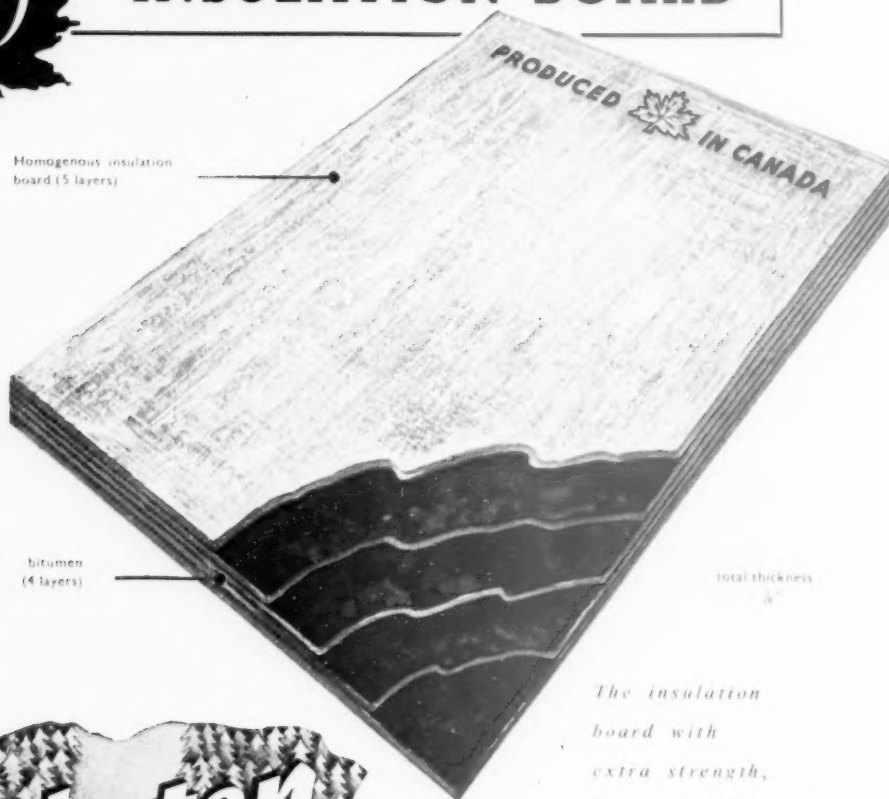


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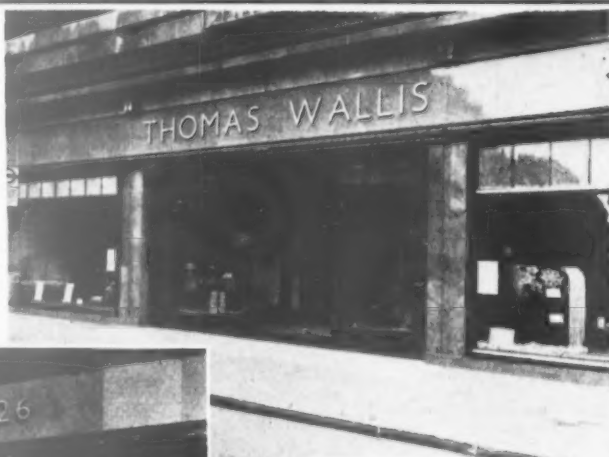
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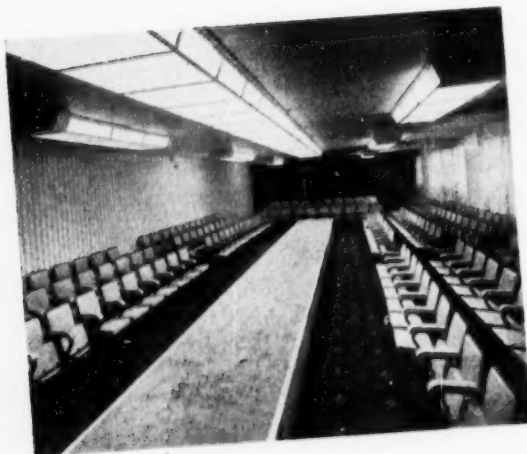


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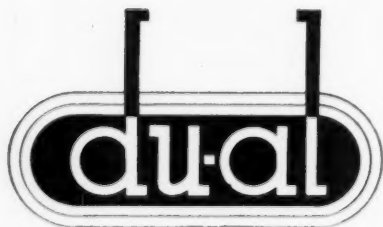
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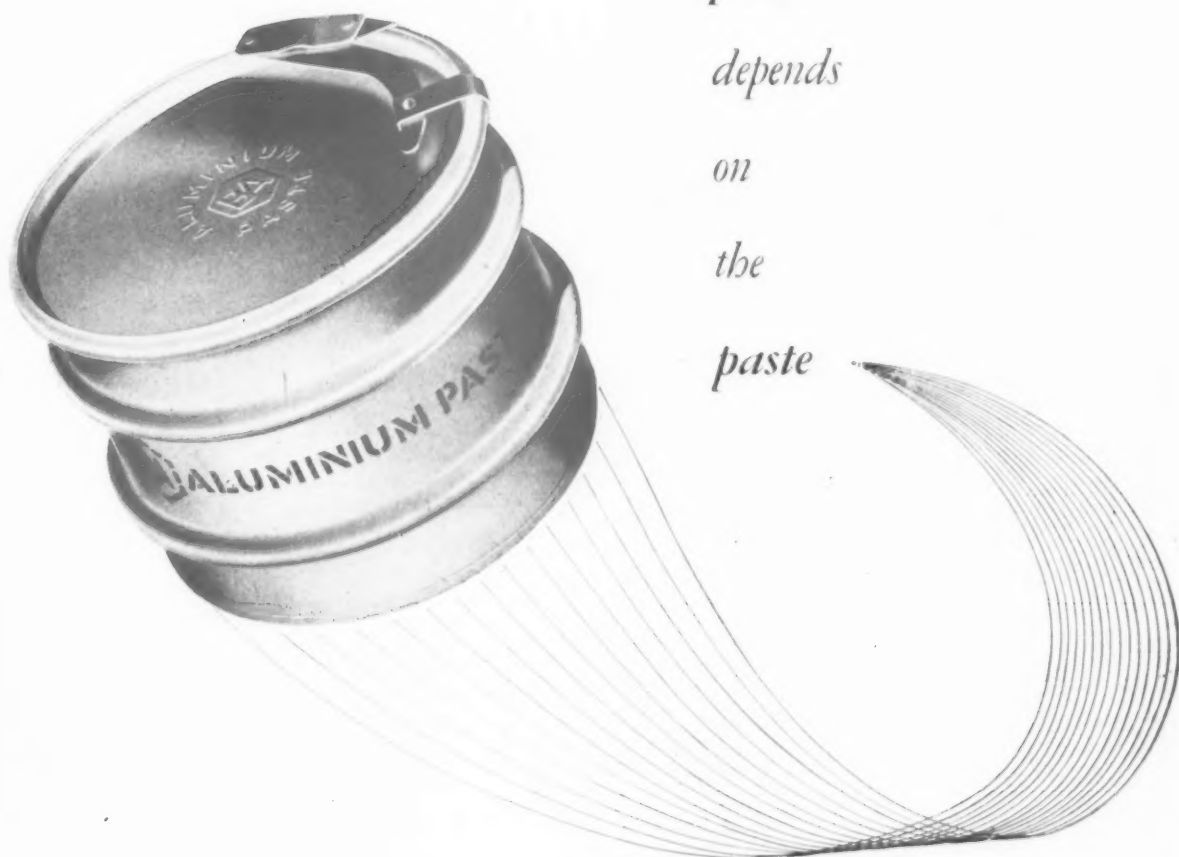
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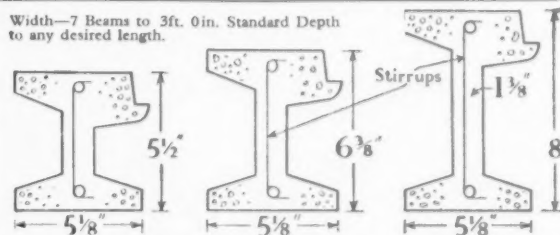
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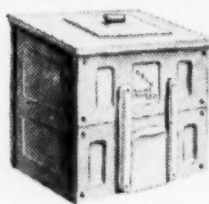
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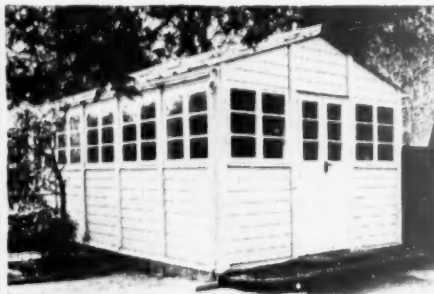
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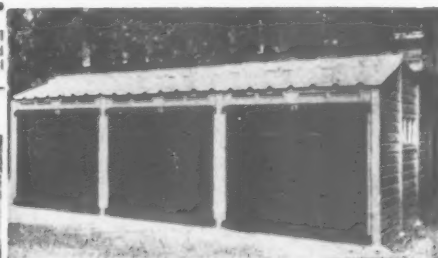
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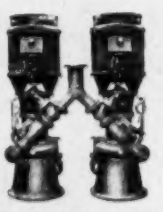
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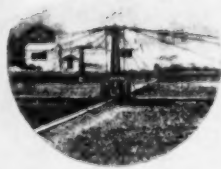





**SEWAGE AND
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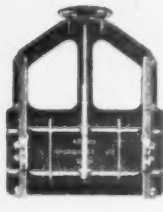
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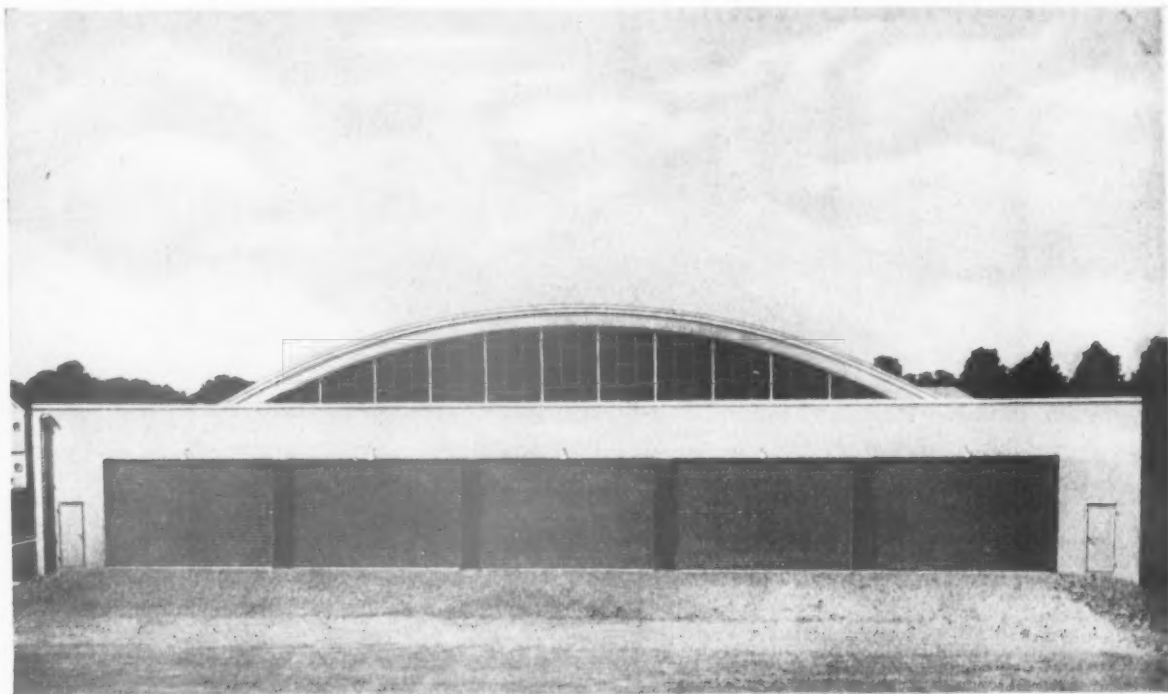
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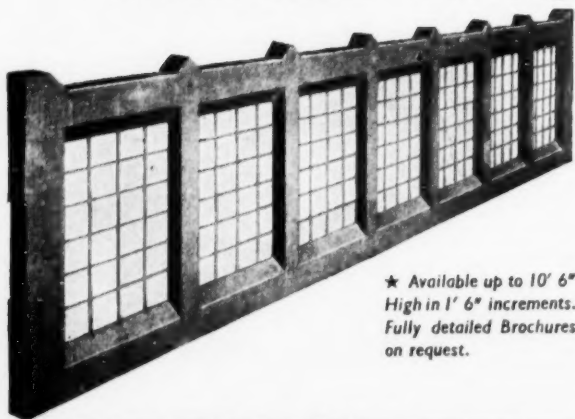
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125

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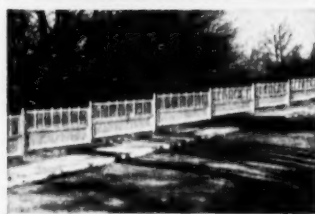
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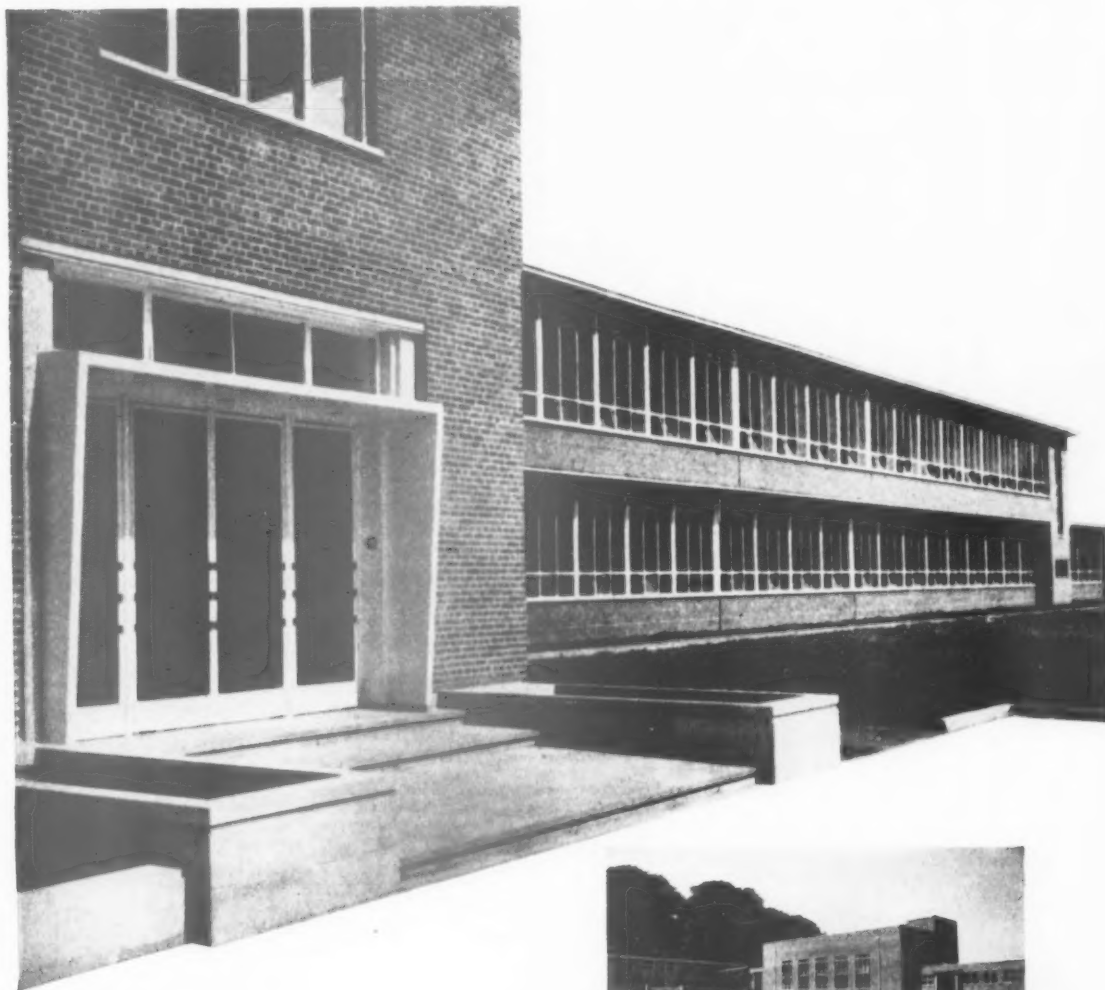
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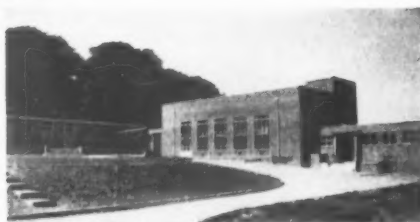
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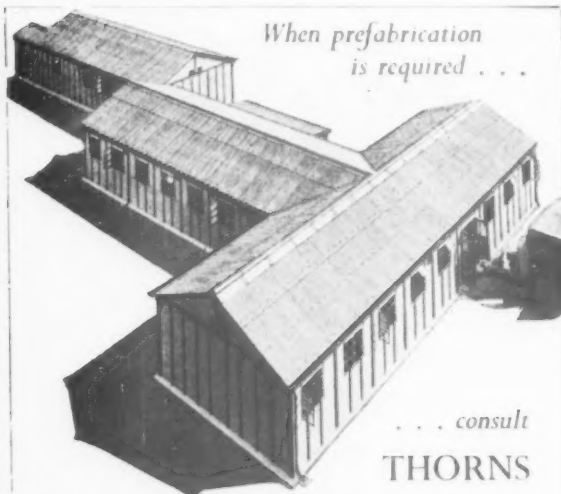


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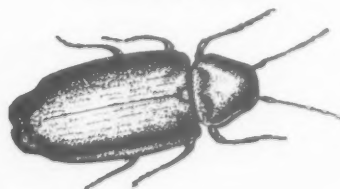
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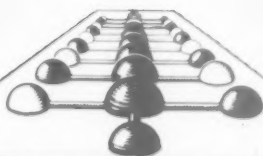
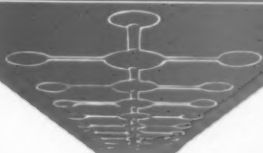
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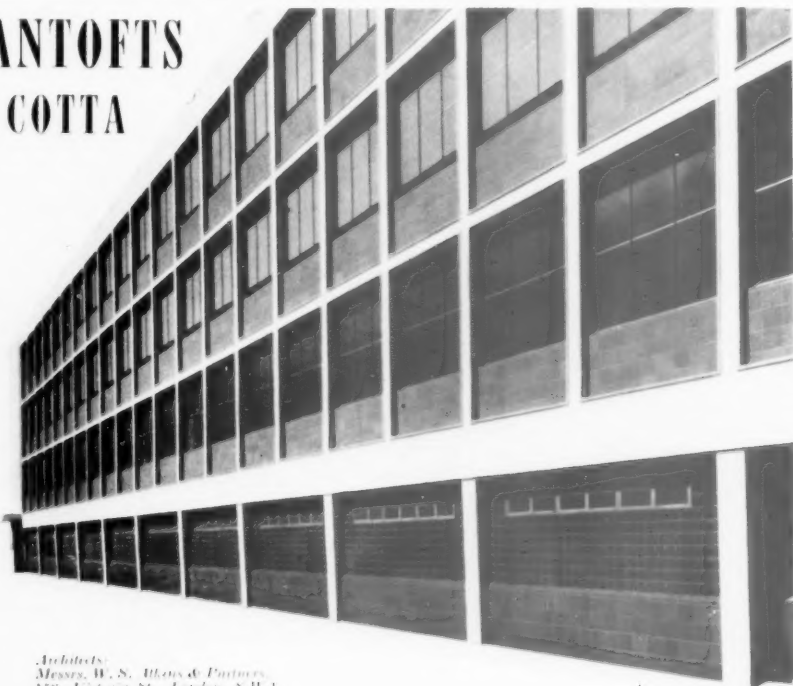
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LET US CONFER

ONCE again the annual conference of the R.I.B.A. has come round. As it is being held so near London, in Coronation year, on the south coast in the "Garden of England," it is an attractive prospect and a function that is likely to be well attended.

There is, we suppose, because of foreign visitors to this country this year, an opportunity for the R.I.B.A. to entertain at its conference Continental, American and Colonial architects who may be around, perhaps visiting this country for the first time. If there are any such guests they will find the British Architects' Conference, as it is now called, a very traditional, though not terribly formal, sort of affair. The social side of a "convention-get-together," or even what some have irreverently called the "binge" part of the proceedings, must be a part of the show, but it can always be nicely balanced with formal receptions and serious business.

In the latter, the business of conference and discussion, the R.I.B.A. has, in recent years, been criticized as being slack and unenterprising. This year the conference hosts, the South Eastern Society of Architects, has evolved a programme which, as far as its business side is concerned, is different from previous ones. In this experiment the R.I.B.A. and the Allied Society should be jointly congratulated, and it is to be hoped that in a resulting success new and extended lines for future development will be found.

The two principal innovations are, first, the "papers" (of which there are more this year) will be circulated before the meetings and only a synopsis is to be read at each session; a procedure which gives the maximum time for discussion and for replies by the contributors of the papers. Secondly, the second session is to be a "secret" one; as it may involve some heart-to-heart exchanges between two sides of the profession, official and private architects, it is

considered that closed doors would lead to freer discussions of the papers and the problems they will raise. The conference agenda states that no reporters will be present at this second session, but we notice that an Institute "hand-out" suggests a slightly different formula, namely, that the public will not be present and that there will be "discretion in reporting," a phrase for which some may require a modicum of interpretation.

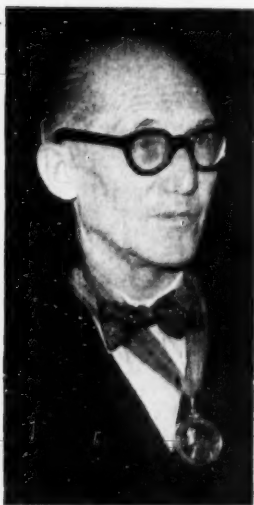
The subject for discussion at this year's conference is "School Building." This is a very topical subject, vital to the community and of interest to many architects and local government officials at the present time. The only criticism of the choice of subject is possibly that of repetition; it is not so long since other and extensive debates on this subject have taken place, even at the R.I.B.A., and the publications of the Ministry and of the professional and technical press keep fairly abreast of developments. The real crux of the problem of educational expansion in this country at the present time and, indeed, for some 10 or 15 years hence, is the relation of building needs to the actual or estimated population statistics which can be culled from the recent census and the sample figures so far published. Judging merely from the titles of the papers, only that to be presented by Mr. Johnson-Marshall, "Research and Development," would seem to provide real opportunity for discussion of this central question of vital requirements.

The R.I.B.A. have explained and excused the choice of subject as a necessary and good opportunity for a general review of the subject. One of these years we still hope that this conference will take its courage in both hands and discuss architecture in general and the qualities that go to make it a live expression in particular. As a learned society the R.I.B.A. should give, from time to time, a balanced lead on the background philosophy of its own subject.

The public, and particularly "big business," still need a lot of enlightenment and, in fact, have a right to it.

One of the serious items in a conference of this sort is the expenditure involved. This, on a modest estimate, even for an architect from no further afield than London, would be about £12 10s., which, if he were accompanied by a guest, would be doubled at least. This item may be regarded, even by those who, in these hard times, can ill afford "extras," as well worth while, having regard to the importance of the occasion and the opportunity for exchange of views and to see and learn things of use. But income

tax rebates are curious and not always to be relied upon in their impact and the private practitioner cannot but feel that his colleague in official service is somewhat better off when he gets official leave of absence and even a grant-in-aid to attend the conference; to say nothing of a background feeling that he must add to his own private expenditure another small item (through the medium of rates and taxes) towards the expenses of his official friend. But, some will say, why quibble? What is money, after all? Even so the little problem remains, even in a good cause, for many, and especially the younger members of the profession.



EVENTS AND COMMENTS

THE ROYAL GOLD MEDAL

M. le Corbusier's speech at the R.I.B.A. was reported in last week's issue. Read in translation it becomes little more than a long tale of woe, but delivered by M. le Corbusier it was semi-humorous and rather sad, and did not sound at all like a complaint. M. le Corbusier is not an easy man to deal with officially, and Mr. Howard Robertson is to be congratulated for carrying off the meeting with such smoothness. If there were any uneasy moments they were not noticed by what must surely have been a record crowd. This crowd was not packed with students, although it contained a good many. It was a crowd of all ages and showed how thoroughly the membership of the R.I.B.A. approved of the Council's choice. The eulogies were all good and well delivered, particularly that of M. Claude Lebel, of the French Embassy, who deputized for his ambassador. He spoke almost too perfect English, and made several good points. He had noticed that the first gold medal was awarded to a foreigner in 1848, and wondered whether it was normal to honour foreigners in that way at that time. He wittily contrasted the work of four French royal gold medalists, Garnier, Perret, Viollet le Duc and Le Corbusier. Mr. Colin Glennie spoke well for the students. The applause which followed the actual presentation was

surely the loudest and longest ever heard at 66, Portland Place.

M. le Corbusier had earlier been entertained to lunch by members of the executive committee of the M.A.R.S. Group; he was anxious about taking the medal through the Customs. When Auguste Perret returned to France on a similar occasion he was fortunate to be travelling with the French Ambassador, who put it in his pocket. When M. Perret arrived in Paris someone asked him where the medal was and he at once thought that his scheme had been detected, but all that was required was that he should wear the medal for the photographers.

M. le Corbusier spent the morning following the R.I.B.A. meeting with a party of students who took him out to lunch. Some Londoner let the side down by taking Corb's overcoat and leaving an inferior one. In the evening the A.A. gave a dinner attended by about eighty members. In spite of the dinner jackets this was a most friendly and informal affair. Those attending were a very fair cross-section of the membership. M. le Corbusier was welcomed and introduced by Mr. Gontran Goulden in French of a quality and sonority not often heard on the west side of Bedford Square. Corb was having an evening off from architecture and told us how nice we were, how civilised the British were, and how kind. He was obviously very well pleased by being asked for an order to view the Unité d'habitation at Marseilles by a young London airport official. The following day he several times said how he had enjoyed himself at the dinner, which, by its formal setting and informal atmosphere had struck exactly the right note. Fans will be interested to hear that among the many jobs on his board at the moment there is a project for a monastery, the programme for which is taken, with very few alterations, from the twelfth century.

DANISH HOUSING AT THE BUILDING CENTRE

The Danish Ambassador is to-day opening an exhibition of Housing and Furnishings at the Building Centre. The Danish architectural part of the exhibition has been prepared by one of the leading Danish Housing Societies, the Dansk Almennyttigt Boligselskab. Arkitekt and Mrs. Marten Jensen and Arkitekt Leif Erikson are here with the exhibition. Arkitekt Preben Hansen and his wife are also here with Arkitekt Kai Christensen, of the Copenhagen Building Centre. Illustrations of Preben

Hansen's new Assembly Hall at Aalborg are included, I understand, as an annexure to the exhibition.

The Building Centre held its annual luncheon at Claridge's last week. Editors of the leading architectural papers were among the guests. It was clear from Mr. F. R. Yerbury's report on the year's activities that the Centre is doing very well. This is its twenty-first year and the fact that it has grown and prospered so well is very largely due to Yerbury who started it and still directs it. Congratulations Sir. Mr. Basil Spence, O.B.E., F.R.I.B.A. and Mr. Frank Every, F.R.I.C.S., were elected to the Building Centre Council at the annual general meeting which preceded the luncheon.

THIS CAR PARKING

Various people have suggested the Horse Guards Parade as a site more suitable for an underground car park than the London squares. It is claimed that no amenity would be lost and that the presence of cars down below would not interfere with the march and counter-march of the Queen's Birthday parade. I am told by people who should know that in fact the ranks might be thrown into endless confusion by the numerous ventilating shafts which would be quite indispensable to such an enterprise. In the squares these pipes would, one presumes, be disguised as trees.

I hope those officially engaged in trying to solve the parking problem will see the current issue of the *Architectural Forum* which is largely devoted to it. The type of square gardening that would be left to us after the car parkers had done their stuff is well illustrated in a picture of Union Square, San Francisco. Exits, entrances, vents and large paved areas make up most of the picture, with a few triangular pieces of grass, some formal trees, and a bush or two thrown in. Even this type of gardening requires, the *Forum* points out, very heavy columns to hold up the earth. What price our plane trees? The whole parking problem in America is so much greater and more acute than it is here that I feel sure that much can be learned from American experience. They have, after

all, tried a number of solutions. The *Architectural Forum* held a conference of representatives from all walks of life interested in car parking and this conference produce a list of answers to the question "How can big cities save their downtown districts from strangling in their own congestions"? Here are some of them:—

(1) By using the price mechanism to ration street use. This corresponds to the electrified wire system for scaring starlings. The idea being to make people pay more for kerbside parking in busy streets.

(2) By separating car and truck traffic in time and space.

(3) By encouraging mass transit to carry more people faster, i.e., better public transport.

(4) By banning kerb parking or fitting its price to its cost.

(5) By enticing the all-day parker away from the city centre.

(6) By encouraging private capital into the garage business.

(7) By building better roads to and through the downtown section.

(8) By reducing the cost of parking garages to \$1200 per car.

My feelings are that if the Americans cannot solve this problem with all their money, hustle, mechanical parking garages, and so on, we are unlikely to do so by spoiling a few squares.

THE D.I.A. CHARING CROSS POLL

As reported last week "contemporary" polled 60 per cent of the votes in the recent D.I.A. Charing Cross exhibition poll. This is encouraging. At least I hope it is. The danger is that manufacturers not in the top flight will turn to mock modern—as indeed some already have—with results which will not only be evil to look at but devilish uncomfortable to sit on.

The D.I.A. may congratulate itself on making some thirty thousand people declare where their interest lie in furnishing. Let us hope that the exhibition will be equally successful elsewhere.

ABNER



Mr. Peter Smithson, A.R.I.B.A., with his model for the Coventry Cathedral Competition, at the 20th Century Form Exhibition.



Society of Mural Painters Exhibition: *The Lion and Unicorn*. Oil and Wax decoration for Saloon Bar by John Armstrong.

M. Le Corbusier at the A.A.

A DINNER in honour of M. Le Corbusier was held at the Architectural Association, on April 1st, 1953. Mr. A. R. F. Anderson, F.R.I.B.A., President, occupied the Chair.

The President said: This is the A.A. "Corb" has been received right royally at the R.I.B.A. by many of his friends. To-night he is our guest, and we are going to entertain him. We are not going to have any speeches at all! Mr. Goulden is going to welcome him here, and then "Corb" is going to answer and say what he has to say—and no one knows what that will be—and then we are all going upstairs and it will be free for all. That is the way we like it.

I now call on Mr. Gontran Goulden to give a welcome to M. Le Corbusier.

Mr. Gontran Goulden, T.D., A.R.I.B.A., speaking in French, said: The name Le Corbusier is nowhere better known in this country than at the A.A. For years Le Corbusier has been the inspiration of our students and for years we ourselves have followed the progress of this great architectural figure, by reading his books, discussing his philosophy, listening to him speaking, or looking at his works. There is no need to give you a catalogue of his works nor to tell you how great an architect he is.

Last night at the R.I.B.A. some of our most distinguished architects and critics praised the special qualities of M. Le Corbusier, architect, town planner, poet, philosopher and prophet. This evening we want to be less formal and less official and to give M. Le Corbusier a warm welcome—*pas en poisson d'avril mais en corbeau d'or*—as a friend of our Association. That is really all that I have to say.

Here is a little story about Grock, the famous French clown. Someone asked him one day whether he could speak English. "But of course," replied Grock. "Well, let us hear you speak some." "Oh, no." "But yes." "But I don't want to." "All the same, please speak some English." "All right then—Lloyd George." When I assure you, M. Le Corbusier, that the children of members of the A.A. say for their first words of French "Le Corbusier," you will see that it is quite unnecessary for me to say anything more about your reputation. However, I must not exaggerate, for fear M. Le Corbusier takes away the idea that in England no one thinks of anything but him.

Here is another story, but this time it is true. A few weeks ago we held an entrance examination here for students wishing to enter the school. One of the questions was "Who is Jean-Paul Sartre?" A candidate replied: "He is a French architect who has just built a large building near Marseilles."

To conclude, I must be more serious. I should like to speak, my dear Monsieur, for the President, Council and Members, with whom, of course, are included the students, of the A.A., and to say how pleased, happy and proud we are to have you with us this evening. We offer you our heartiest congratulations on the honour which has most deservedly been conferred upon you.

I now ask Monsieur Le Corbusier, Commander of the Legion of Honour, Royal Gold Medallist, to address you.

M. Le Corbusier, who was greeted with prolonged applause, said, speaking in French: "Dear Friends, it is very nice to hear such friendly words, particularly when for once they are not about architecture. I am very happy to be received by architects who do not talk about architecture but who speak so sympathetically and who refer to the extraordinary titles which have been conferred on me—Commander of the Legion of Honour and Royal Gold Medallist of the R.I.B.A. All that is very fine, and indeed magnificent, but in a sense it is of no importance. What is important is friendship, friendship between men and women who meet together in the search for what will satisfy the modern conscience. Architecture comes into that, and town planning, and the arts, and modern thought on these problems.

I believe that I have found the reason for the very

curious fact that for centuries the French and English fought against each other. It is really because they were true friends that they fought, because they were of the same worth and had the same capacities; they had, as it were, the same coefficient. In the old days they used to play about with swords and bows and arrows. Nowadays, unfortunately, we have weapons of a different kind, extremely disagreeable weapons, not individual ones, and we must not play about with them in these days. We must not play with atomic bombs which could cause our world to disappear. We do not know what the end of all this will be.

It is delightful, however, to experience the friendship which one meets with in England. You have kindly thoughts of the French, and you have been very kind to me—more kind, sometimes, than the French themselves. I always find it a great pleasure to arrive in this country every time I come here. I travel a good deal about the world, and I always like arriving in London.

Mr. Goulden has told you a little story, and now I will tell you one. Coming back from India last year I woke up when the aeroplane was over Sicily. I was sitting close to the motors, and when I looked out of the window I saw that one of the motors was not moving, and I thought to myself "If the other one stops working too, it is going to be disagreeable." After a few minutes, the captain of the aircraft came in and said that one of the motors was not functioning and instead of going to Geneva and then to Paris the plane would go direct to London. From London we should be taken by air to Paris. When we reached London, there was a young man whom I met in the airport who said to me "Are you M. Le Corbusier?" I told him I was, and he then said: "I am going to Marseilles to-night. Can you say a word for me so that I can visit your building there?" I asked him how he knew about it, and he said he had read about it in one of the magazines. You are very *au courant* in England! Those are things which are of much more value than to be a Commander of the Legion of Honour or even a Royal Gold Medallist. I love to have this contact with young people who I feel have the same coefficient as myself, and who are full of enthusiasm. I admire them and I wish them good luck.

I do not want to talk to you about architecture. I detest talk about architecture. In my own home it is understood that we do not talk about architecture, and I occupy myself with painting. I do not want to talk about architecture, because architecture is something to be done, not talked about.

I am happy to have spent these few days in England. I slept yesterday afternoon and this morning and again this afternoon, as I have never slept before in my life. In my hotel the windows are thick and the room is very quiet. For fifteen years, I should think, I have never been able to sleep in the morning or the afternoon, but I have been able to do that here, and I feel calm and tranquil.

In France we put on many of our buildings "Liberty, Equality, Fraternity." Those are magnificent ideas; the difficulty is to realize them! However, I think I have said enough, for all I really want to do is to express the feeling of friendship which I have for you. I am greatly touched by my reception and, as I have said, I am extremely happy to have been in London, a town which I love very much, and which I loved from the first day I saw it. When I am here I feel that I am in a country where something is being done which is alive, which is conscious of its existence in this modern world. I am a traveller, going here, there, and everywhere, and I am always delighted to be in a place where I can feel that the spirit lives, the mind lives and the soul lives. I can feel that in England. I thank you for being so kind to me, and all that I really want to say is once again "Thank you."

The President: It has been suggested that on this occasion of the award of the Royal Gold Medal M. Le Corbusier might be willing to set a competition for the students of the A.A. The Council have considered the suggestion and will be happy to award an appropriate prize. "Corb" has agreed to set a competition for the students in the A.A. this year, and no doubt the results will be world shattering!

NEWS OF THE WEEK

L.C.C. School Building Panel of Architects in Private Practice

The London County Council is inviting applications with a view to forming a new panel of architects in private practice to carry out educational building projects on behalf of the Council.

The Council normally allocates part of its building programme each year to private architects and over 100 schemes, ranging from minor additions to the erection of new secondary schools costing over £500,000, have been placed in the hands of architects in private practice since the first panel was formed in 1947. The total value of these schemes is over £4,000,000.

Application forms giving details of the panel may be obtained from the Clerk of the Council (E.1), at the County Hall. These forms have to be returned by April 24, 1953.

COMING EVENTS

The Housing Centre Trust.

April 21 at 1.15 p.m. Discussion on the book "Design in Town and Village," by the authors, Dr. Thomas Sharp, C.B.E., F.R.I.B.A., M.A., Fredrick Gibberd, F.R.I.B.A., M.T.P.I., and Professor Sir William Holford, F.R.I.B.A., M.T.P.I. At 13, Suffolk Street, Haymarket, S.W.1.

Royal Society of Arts.

April 22 at 2.30 p.m. A paper on "Buckingham Palace," read by H. Clifford Smith, M.A., F.S.A., at John Adam Street, Adelphi, W.C.2.

The Institution of Structural Engineers.

April 23 at 5.55 p.m. Talk on "Modern Machine Foundation Technique," by J. H. A. Crockett, B.Sc., A.C.G.I., D.I.C., A.M.I.C.E., and D. B. O'Neill, B.Sc., at 11, Upper Belgrave Street, S.W.1.

The Architectural Teachers' Conference

April 25 at 10.30 a.m. Architectural Teachers' Conference at The Royal Institute of British Architects, 66, Portland Place, W.1.

Society for Cultural Relations with the U.S.S.R.

April 21 at 7.30 p.m. Architecture and Planning Group lecture on "Baroque and the Classical Motifs in the Planning of the Centre of St. Petersburg," by B. Lubetkin. Chairman John Summerson, at the S.C.R., 14, Kensington Square, W.8.

ARCHITECTS WILL

Mr. Reginald F. J. Fairlie, R.S.A., LL.D., F.R.I.B.A., of 7, Ainslie Place, Edinburgh, left £67,070.

I.A.A.S. Coronation Banquet and Ball

In celebration of the Coronation, the Incorporated Association of Architects and Surveyors will hold a Banquet and Ball at Grosvenor House, Park Lane, London, W.1, on Friday, May 15, 1953. The President, Alderman F. W. Dean, D.L., J.P., will receive the guests at 6.30 p.m. and the principal speaker will be Lord Mancroft, Lord-in-Waiting to H.M. the Queen.

Members of the professions desirous of attending are invited to communicate with the General Secretary, I.A.A.S., 75, Eaton Place, London, S.W.1. Tickets are priced at 2 guineas each.

ANNOUNCEMENT

Mr. J. D. Tetlow, B.Arch., A.R.I.B.A., A.M.T.P.I., formerly Area Planning Officer, Staffordshire County Council, has joined Mrs. B. Y. Tetlow, Dip. Arch., A.R.I.B.A., A.M.T.P.I., in private practice. They will practise under the style of J. D. and B. Y. Tetlow at 31, Townfields, Lichfield, Staffs. (Telephone 3003).

CORRESPONDENCE

Advertising

To the Editor of A. & B. N.

Sir,—With the subject of advertising the services of architects being very much in the "Building News," I should like to draw readers' attention to further important fundamentals of this problem.

Bluntly, the man in the street and even the man in the motor car (that is, he of greater means) is not interested in architecture. He does not fully understand what it means, nor does he realize how the architect can safeguard and best interpret his interests. It would appear even that interest in clothes draws more attention than the cladding of his household and, in a wider field, his civic institutions, entertainment palaces and so forth. What a sad reflection on the architectural profession's ability to express and spread their feelings and ideas!

Given the retreat of culture and the rapid encroachment of the God Mammon with his vast resources of machine-made entertainment, which appears to be supplanting individual thought these days, it is vital that the architectural profession should make the redeeming effort, as no one else is likely to champion our cause.

In addition to this overall tendency of the age is the topsy-turviness of a society which still acknowledges and even honours the speculative builder, who caused so much havoc in the inter-war years. There are many now who are becoming increasingly enlightened, but still there are those that flourish in ignorance. Admittedly, the Town and Country Planning Act assures a broad policy of sensible planning, but the solution of the housing problem still lies in their hands to a large extent.

Any factor which can help alleviate

this state of affairs should be brought to focus on the problem. One of these factors, which no doubt keeps an understanding of architecture from the people, is the advertising policy of the R.I.B.A. A change is long overdue. An indication that some steps are being timorously taken lies in the issue of two leaflets explaining the architect's work. However, the policy policeman of the R.I.B.A. should descend completely and emphatically from the ivory tower of misguided professional propriety.

Failing the universal power that the medical profession, for example, wields in this country, architects cannot afford to be misunderstood and overlooked any longer. It is important to remember that advertising does not necessarily stand for the gaudy hoarding or the glaring neon sign, but can be carried out tastefully and discreetly with no loss of prestige. Thus would our service to the community be increased.

I am, etc.,
W. HOME.

Electricity v. Gas and Solid Fuel

To the Editor of A. & B. N.

Sir,—With reference to Mr. Eric Bellingham's letter in your issue of April 2, my earlier letter was not intended as "an attack" on Dutch Uncle. Its purpose was to correct some facile assumptions that are not borne out in experience of electricity supply practice. The inferior grades of coal burned in electric power stations (the proportion of which increases with mechanized mining) could doubtless be used in varying degrees, as the Minister stated, for one purpose or another, provided the expensive designs for proper combustion and the highly skilled operation and maintenance staffs could be made available. The question in regard to domestic premises and small industrial plants seems, therefore, likely to remain an academic one.

Regarding atmospheric pollution, to save you space those interested may be referred to a well-informed article which appeared in the *Manchester Guardian* of March 31, which supports my statement as to the relatively small contribution made by electric power stations.

It is, I understand, the experience of electricity supply authorities that uncertainty as to coal deliveries, as well as high price, has led householders to adopt electric heating and to retain it owing to its greater convenience. If there were only one grade of coal sold at one price, Mr. Bellingham's comparison between home-baked and shop cakes might be relevant.

It seems somewhat premature to talk about what could be done with smokeless solid fuel and modern highly efficient grates until there are signs that both can be produced in sufficient quantities to meet the needs of the public.

I am, etc.,
C. O. BRETTLE.

R.I.B.A. CONFERENCE 1953

THE R.I.B.A. Conference has become a tradition and as such its organization must be approached with caution and handled with care. All the same, tradition is not a dead thing but one which is alive and subject to development and modification.

The S.E.S.A., when its offer to act as host this year was accepted, was fully alive to both points and a little uneasy on account of the second. It had been suggested in the Press that the process of change in recent years had failed to function. Criticism had been made, not so much of the ceremonies and accepted rites, the rural rides and the garden parties, but of the "work" done at the Conference. The patients in fact like the jam but began to complain that the pill failed to work.

It was chiefly then upon the matters to be set forth and discussed that attention was focused and it must be borne in mind that as increasingly large numbers of "official" architects attend at the public expense matters of solemn moment palatable to the Government auditors must form the staple fare.

Fine, wild notions of making this near-continental venture the occasion for an architectural entente-cordiale on the basis of "Reconstruction" were thrown aside as at once un-English and too airy-flairy for official consumption. Aesthetics are, of course, totally unrecognized by accountants, most of the mundane subjects had apparently been well threshed out or beaten flat already, and so we came to "Schools."

It was recognized that Schools in the "Fifties" like Cinemas in the "Thirties," were beginning to be a bit *vieux jeux* among the *avant-garde* but as everyone was busy building them and no one except the Ministry of Education had time to consider why or to what purpose, save to keep the prefabrication companies in work, the brief respite of a Conference was thought to be a good opportunity for a general review.

This seemed to call for a number of speakers and some quite lengthy papers but time and the occasion on the contrary suggested much discussion and no papers at all. Accordingly, the compromise was arrived at of a team of experts, their papers prepared and circulated in advance and after the briefest summary introduction the maximum time for discussion. This is an experiment, it may fail completely, but at least it will have been tried.

The team are first-class, their papers are lively, informative and controversial and the result depends very largely upon the members of the Conference. Here the Press can help enormously because if it can persuade the profession to make the Conference really work by taking part rather than staying at home to criticize, not only may this occasion be a success, but

the way to interesting future developments may be opened.

The idea behind the papers is that they shall present the problem posed by changing educational requirements in chiefly primary education and review the solutions offered, and then proceed to investigate the type of organization tackling it—Official Architects' Department, Official Architect employing Private Practitioners and the Private Architect as a free-lance enterprise. The President has suggested that, in the interests of frank and worth-while controversy, the second section should be conducted as it were in camera without the public and with discretion in reporting.

As a background there is to be an Exhibition of Schools displayed comparatively and of developments in construction and fitting. This is being organized by the S.E.S.A. There will, of course, be as well the usual exhibition of members' work and, in Canterbury, of the City Development Plan. A supplementary tit-bit to be seen at the Garden Party will be a view of English Cathedrals so well known to everyone who has pored over his Banister Fletcher.

The Garden Party will be held in the grounds and buildings of St. Augustine's Abbey, a piquant blending of Butterfield, the medieval and the picturesque. This follows the Inaugural Meeting in the Chapter House and a Service in the Cathedral. The Banquet is to be in a building esteemed in the City almost as highly—the new Simon Langton School for Girls, Hugh Wilson's magnum opus.

Attempts to find a suitable place for the Banquet in Folkestone involved the Conference Executive in a brush with big-business and high finance from which it retreated only just in time to avoid providing the Institute with a seaside holiday home for members.

Notes from the Minutes of the R.I.B.A. Council Meeting held on March 31

Her Majesty Queen Mary.

By a unanimous resolution, the President was desired to lay before Her Majesty The Queen an expression of the Royal Institute's sympathy and condolence on the death of Her Majesty Queen Mary.

Her Royal Highness The Princess Margaret.

The Council received with pleasure the acceptance by Her Royal Highness The Princess Margaret of their invitation to become an Honorary Fellow.

Appointments.

General Council for the National Registration of Plumbers: Annual Meeting, Blackpool, May 23, 1953: R.I.B.A. Delegate.

Mr. James Rawlinson, L.R.I.B.A., having succeeded Mr. H. M. Hedges, L.R.I.B.A., as President of the Blackpool and Fylde Architectural Society,

the Council agreed to the latter's suggestion that Mr. Rawlinson should serve as the R.I.B.A. delegate. (This amends the note published in the Notes from the Minutes of the meeting held on March 3.)

British Productivity Council: Conference, March 19, 1953: R.I.B.A. Representatives.

Mr. Michael Waterhouse, P.P.R.I.B.A.; Mr. Robert Matthew, A.R.I.B.A.

British Standards Institution Building Divisional Council: R.I.B.A. Representative.

Mr. R. N. Wakelin, F.R.I.B.A., in place of Mr. Lister P. Rees, A.R.I.B.A.

National Housebuilders' Registration Council: R.I.B.A. Representation.

Miss J. G. Ledebor, A.R.I.B.A., in place of the late Mr. C. H. James, F.R.I.B.A.

The other two representatives are Mr. A. W. Kenyon and Mr. Kenneth Peacock, F.F.R.I.B.A.

Amendment to Code of Professional Conduct.

On the joint recommendation of the Practice and Salaried and Official Architects' Committees, Clause 6 of the Code of Professional Conduct was amended so as to read as follows:—

"6. A member or student must not advertise or offer his professional services to any person or body corporate by means of circulars or otherwise, or make paid announcements in the Press; except that:—

- (a) he may apply to prospective employers for a salaried appointment;
- (b) he may advertise a professional appointment, open or wanted, provided the advertisement is directed only to members of the profession concerned;
- (c) he may respond to an advertisement addressed to members of the profession inviting them to submit their names for inclusion in a panel or list of names of architects, from which the advertiser may select an architect or architects for a particular project; provided that his response to such an advertisement does not contravene any other Clause of this Code or the Royal Institute's Regulations for the Conduct of Architectural Competitions from time to time in force;
- (d) he may insert in the architectural professional Press one notice of change of address;
- (e) he may notify his correspondents by post once of any change of address."

United Kingdom Committee, International Union of Architects.

Arrangements have been made for Mr. M. Hartland Thomas to give a paper on Modular Co-ordination at the Congress of the International Union of Architects to be held in Lisbon in September, 1953.

It was agreed to appoint Mr. Hartland Thomas to the United Kingdom

Committee, I.U.A., to facilitate the co-ordination of his paper with the other matters for which the United Kingdom Committee are taking responsibility.

The Late Mr. Ralph Deakin (Hon. A.R.I.B.A.): Collection of Architectural Photographs.

The Council were informed that the late Mr. Ralph Deakin had bequeathed his collection of architectural photographs to the Royal Institute.

Amendment to British Standard 990: 1945: Metal Casement Windows and Casement Doors.

The representatives appointed by the Council at their last meeting reported on a discussion held with the Director of the British Standards Institution.

The Director had confirmed his previous statement that no standard or amendment was issued without "general consent," but in the course of discussion it was made clear that this expression did not imply unanimity or even any form of majority vote. Where there appeared to be divergence of opinion on the value of a standard it was the function of the officials of the British Standards Institution to endeavour to reconcile conflicting views and ultimately to take a decision as to whether a standard should be prepared or not. While the Royal Institute was regarded as an important representative of user interests, it had no power of veto of a standard regarded as unsatisfactory.

The Council were not altogether reassured by this report and it was appreciated that the inclusion of the Royal Institute in the list of bodies participating in the preparation of standards might on occasions be misleading by indicating that the standard had the Royal Institute's full approval.

It was agreed to take note of the discussion and to watch developments, while continuing the Royal Institute's work on British Standards on the existing system.

Grants.

The Council approved the following list of grants for the year 1953-1954:—

	£	s	d
British School at Rome	750	0	0
Architects' Benevolent Society	150	0	0
Architectural Association Lantern Slide Collection	100	0	0
British School of Archaeology at Athens	50	0	0
C.P.R.E.	50	0	0
Students' Visit to Rome	50	0	0
Parliamentary and Scientific Committee	26	5	0
Association for the Preservation of Rural Scotland	10	0	0
B.S.I.	26	5	0
R.I.B.A. Cricket Club	26	5	0
R.I.B.A. Library Group	10	0	0

	£	s	d
Council for the Preservation of Rural Wales	7	0	0
International Federation for Housing and Town Planning	5	0	0
British School at Rome, Faculty of Archaeology	3	3	0
National Art Collections Fund	3	3	0

EXHIBITIONS

Society of Mural Paintings Exhibition at the R.I.B.A.

The first exhibition of the Society was at the New Burlington Galleries. This time, by exhibiting in the Henry Jarvis Memorial Hall at the R.I.B.A., the proper relation between architect and painter has been made much clearer, and in many cases the mural is shown together with the architect's sketch indicating its position in his building.

Lord Methuen, Hon. A.R.I.B.A., opened the exhibition and mentioned the Mexican Exhibition at the Tate, where the tremendous murals of Riviera, Orozco and Siqueiros are represented by photos and details.

In his note in the catalogue of the first exhibition, Mr. Hans Feibusch wrote: "A revival of Mural Painting is under way. . . . The Architect on his side will have to grow much more familiar with contemporary painting than he usually is." This exhibition marks a stage in the revival and gives architects the opportunity to see a wide variety of treatments of space in actual buildings. The problem for the mural painter of giving the eye a point to rest on and a decoration with lasting appeal which composes with the architect's work is not easy. The dramatic illusions created by the great masters of perspective are no longer attempted, but something more than enlarged posters, or designs of delightful colour but slight content is required. The Rex Whistler tradition of whimsical charm is carried on by Mr. Armstrong. Miss Barbara Jones, whose book on the Unsophisticated Arts lead one to hope for great things, disappoints. Betty Swanwick, whose pre-war posters were remarkable, shows a bright and amusing design for a nursery school. Mr. Hutton and Mr. Feibusch give great pleasure with their colour. The throng on the opening day prevented closer scrutiny of others which should have had mention.

The setting of the exhibition has been skilfully carried out by Mr. Leslie H. Gooday, A.R.I.B.A., M.S.I.A.

20th Century Form: Painting, Sculpture and Architecture, Whitechapel Art Gallery, Now Until 31 May

Where, other than at the Whitechapel Gallery, is it possible to see a tramp sitting at ease reading an old

newspaper in the middle of an exhibition of modern art, without the incongruity seeming the least bit important?

For those who are not incurably antipathetic to modern art, this exhibition is a must. The bringing together of painting, sculpture and photos, and models of architecture must be an extremely difficult thing to do, and Mr. Trevor Dannatt, "who has advised freely and generously on the architectural side of the exhibition; and without whose expert knowledge and patience this exhibition would not have been possible," to quote the trustees of the gallery, is to be congratulated on a most stimulating and valuable ensemble.

It is many years since it was a new idea to point out a common aesthetic between painters like Mondrian and modern architecture, but this was only appreciated by the few. Here is a popular, and free, exhibition, with very valuable and carefully chosen pieces which illustrate what is common to the three arts. The painter remains the true pioneer in matters of pattern, composition and colour. Architecture, with its greater technical responsibility is more cautious, but gives reality and solidity to the painters' and sculptors' work. Why bother about colour theories, when the painters provide such a wide choice of new and exciting colour combinations? Why scorn abstract art when it can give the eye its clues to modern buildings? For the purpose of this exhibition the models of buildings serve as ends in themselves, and we can put aside for the moment the very great problems of actual execution. Many of these models are mounted vertically so that they can be looked at as patterns. But they are such beautiful objects that, if it is possible to create a national museum of architectural models, not only for modern examples, but in historical sequence, it should be most certainly done.

This exhibition gives those who have applauded the Gold Medal award to Le Corbusier, the chance to see some photographic enlargements of early and late examples of his work. For those who have never been to the gallery, it is quite near Aldgate East station and also reached by a number of buses from the West End.

The Modular Society

Members may be interested to know that the Society for Individual Freedom is holding its 116th Luncheon at the Connaught Rooms, Great Queen Street, W.C.2, on Thursday, April 23, at 12.45 for 1 p.m.

The guest of honour will be Alfred C. Bossom, Esq., LL.D., F.R.I.B.A., M.P., who will speak on "Rebuilding Britain," with particular reference to modular methods.

Tickets, price 15s a head, are obtainable from the Society for Individual Freedom, 96, Victoria Street, S.W.1. (Tel.: Victoria 7932.)

Leverhulme Scholarship in Architecture, 1953

The Leverhulme Scholarship, tenable at the Architectural Association School of Architecture, London, value £2,000 which includes payment of fees and maintenance for five years, has been awarded this year to Mr. John Royston Plant (The Carlisle Grammar School and the Carlisle School of Art).

Coventry Society of Architects' Dinner

chairman, Coventry Society of Architects, proposing a toast to "The City of Coventry" at the Society's annual dinner at the Regent Hotel, Leamington, last week, said Coventry, a city which had become famous through its utilitarian products, would soon gain an equal fame from its works of sculpture, its well-proportioned buildings, and eventually its "truly lovely Cathedral." "This city must have been one of the most random growths that any generation could inherit." He thought the Development Plan would provide an acceptable solution. "I would say that no architect could quarrel with the broad issues of such a beautifully conceived scheme, and congratulations are due to our city councillors, our city architect, and the legal administrators in the Council House. Mr. Reyner said that "loans, licences and limits" had caused a falling-off of business which in its turn had caused "some mild unemployment in the architectural profession." The limits, he said, were the limits of planning permission—"one of the greatest hazards to our living these days." Alderman H. B. W. Cresswell (Deputy Mayor of Coventry), responding to the toast, emphasized the importance of expert direction behind planning and building. "The Development Plan for the next twenty years once assured," he said, "would help all architects in advising their clients and the duty of the Council in exercising development control would be much eased and more fruitful if all schemes were prepared by architects and not by amateurs. The public are becoming increasingly aware of the expense they incur by not following proper advice. "This matter is of very great importance, as the possibility of 'spec' building, which was the ruin of the countryside pre-war. In our own city, history and industry tread fast on each other's heels. The architect, who sees realities in advance of anyone, must place his talent at the service of the masses in the new age." Referring to amenities in the new city, Ald. Cresswell said it was becoming increasingly difficult to afford these amenities from the rate people were able to pay. There was need to consider the revision of the rating system, before the time came when the rates would almost wholly be swallowed up by wages and loan charges.

Competition for Essay on Play Areas Around Flats

The Housing Centre is offering prizes to the value of 22 guineas for an illustrated essay on a play area for a site in Central London. The essay or essays for which prizes are awarded will become the property of the Centre, who reserve the right to publish it, or them, in the Housing Centre Review. The competition is open to anyone interested. Entries should be of approximately two thousand (2,000) words, illustrated with a layout plan and up to six sketches showing the equipment and amenities of the play space. The essay should give arguments for and against such provision as is made, and take into consideration social as well as physical factors. A site plan and details of the conditions will be supplied to all competitors on application. The site is on an estate in a high-density area of London to be developed with flats, with a child population of about two hundred (200) of up to twelve years of age. Competitors should suggest how the needs of children of different ages within the group can most successfully be met, and should illustrate their suggestions sufficiently to enable the assessors to judge the merits and practicability of the provision proposed. Exact specifications or estimates of cost need not be submitted, but competitors should bear in mind the need for economy both in capital and running costs, and endeavour to make the scheme practical under present economic conditions.

CONDITIONS OF ENTRY

Competitors may combine in sending in an essay. Each essay must be typewritten and must not have been previously published.

Essays must be delivered on or before September 1, 1953, addressed to the Secretary of the Housing Centre Trust, 13, Suffolk Street, London, S.W.1. The essay must be submitted without the name of the competitor. Each essay must bear a nom de plume, legibly marked on the first sheet. Each essay must be enclosed in an envelope marked "Play Area Competition," and with the competitor's nom de plume at the lower right-hand corner.

Each essay must be accompanied by a letter containing the nom de plume and the competitor's name and address, in a sealed separate envelope, having on the outside the name of the competition and the same nom de plume as that attached to the essay submitted. Should none of the essays be considered of sufficient merit or importance to deserve the prizes offered, the Trust reserves the right of withholding any of the awards. In the event of two or three essays being of equal or almost equal merit, the prize may be divided. The essays for which the prizes are awarded will become the property of the Trust. The carriage of essays to and from the office of the Trust, and all expenses incidental thereto, must be paid by the competitors. Unsuccessful essays will be returned. Due care will be taken of all essays, but the Centre will not be responsible for any loss of, or damage to, them while they remain in its keeping.

The assessors will be Lady Allen of

Hurtwood, F.I.L.A.; Mr. James W. R. Adams, O.B.E., P.P.T.P.I., F.I.L.A.; Mr. G. Eagleton, of the National Playing Fields Association; Mr. Gordon Logie, A.R.I.B.A., A.M.T.P.I.; Mr. L. E. White, Liaison Officer, Harlow Development Corporation.

Truscon Travelling Scholarship for the Study of Reinforced Concrete Construction

THE Trussed Concrete Steel Co., Ltd., of Lower Marsh, London, S.E.1, offer a Travelling Scholarship of £100 to enable an Associate of the Royal Institute of British Architects to undertake a Continental tour of about three weeks' duration. The winner will be accompanied by a member of the Company's technical staff awarded a similar Scholarship, and they will be required jointly to study interesting reinforced concrete work on the Continent of Europe. A joint report will be prepared, the use and copyright of which will remain at the disposal of the Trussed Concrete Steel Co., Ltd. Applicants must be under 35 years of age and must provide evidence of their office experience and of their special interest in the subject of the Scholarship, i.e., the use in contemporary architecture of reinforced concrete.

Applications must be submitted by May 15, 1953, to the Secretary, The Trussed Concrete Steel Co., Ltd., Lower Marsh, S.E.1, and must contain the following particulars:—

Age; Architectural education; Academic qualifications; Present occupation or employment; Evidence of the candidate's suitability for appointment to the Scholarship (a knowledge of French, Italian or Spanish would be of considerable value); The names of two persons to whom reference may be made regarding the candidate's fitness for appointment to the Scholarship.

The applications will be considered by a Selection Committee consisting of one representative of the Trussed Concrete Steel Co., Ltd., and two representatives of the Royal Institute of British Architects.

National Parks Commission Appointments

Mr. Harold Macmillan, Minister of Housing and Local Government, has made two additional appointments to the National Parks Commission. The Commission now consists of 11 members in addition to the chairman and deputy chairman.

The new appointments are: Brigadier P. B. E. Acland, O.B.E., M.C., T.D., D.L., of Feniton Court, Honiton, Devon, who is chairman of the Devon County Agricultural Executive Committee, and Dr. Nancy Davies, M.R.C.S., L.R.C.P., of Tanyfron, Aberayron, Cardiganshire, formerly an officer of the Welsh Board of Health.



Aylward County Primary School Harrow

ARCHITECTS:

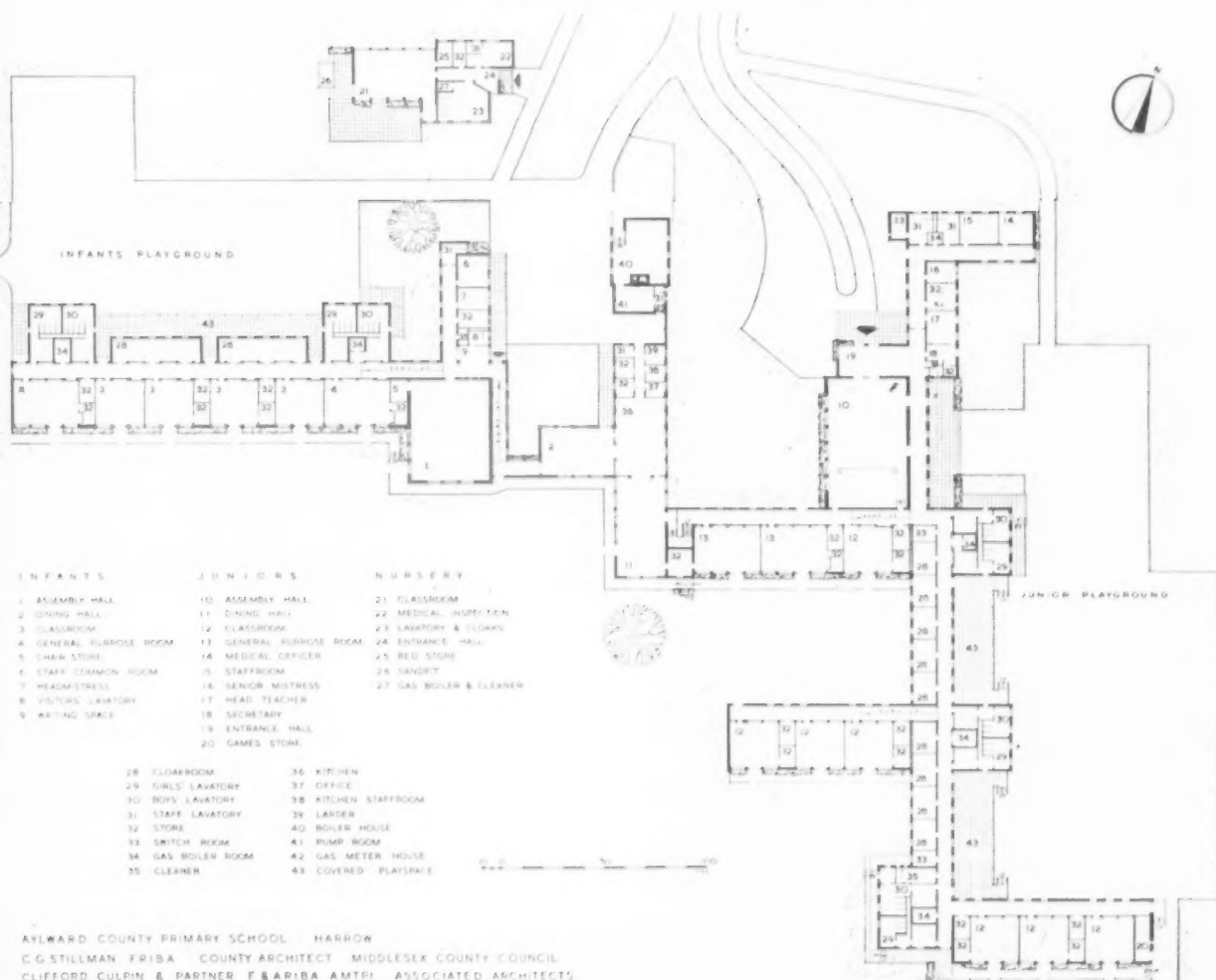
CLIFFORD CULPIN & PARTNER,
F./A.R.I.B.A., A.M.T.P.I.

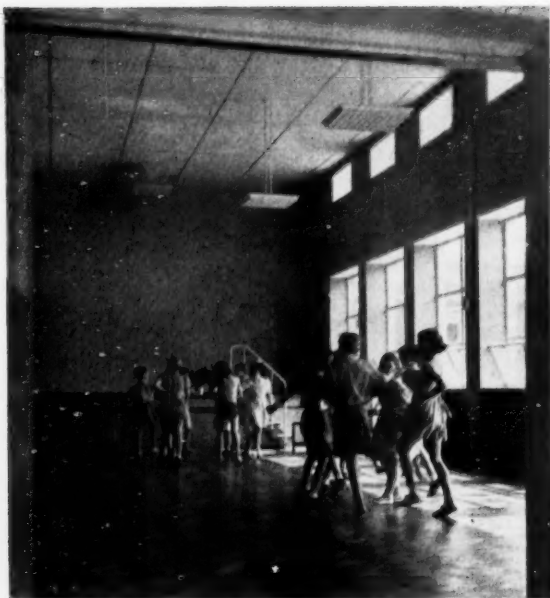
C. G. STILLMAN, F.R.I.B.A.
COUNTY ARCHITECT, MIDDLESEX

General Description

THE main school caters for a 2-form Entry of 320 Juniors and 240 Infants, and a detached Nursery classroom accommodating 30, bringing the total number of places provided to 590.

The school was erected as part of the Middlesex County Council's 1949-50 Schools Building Programme, and was selected from 19 schools in the Harrow district for the combined opening ceremony by Miss Florence Horsburgh, Minister of Education.



*Junior Assembly Hall*

Site and Layout

The site, which adjoins Edgware Golf Course Estate erected by the Harrow Urban District Council, is approximately 250 by 200 yards, and slopes gently to the South. The school was planned to preserve a few fine trees, including a magnificent Cedar of Lebanon. The buildings were kept to the North so that classrooms and dining rooms might enjoy the view to the South, and advantage was taken of a sharp cross-fall to the North-East to introduce a change of floor level, thus avoiding the monotony often apparent in a single-storey building.

Planning

The Infant and Junior departments are separated by the kitchen which serves both dining rooms. Each department is a separate entity with its own Assembly Hall, Staff Rooms and Administrative Rooms. The central boiler house was kept to modest proportions by the introduction of a local gas boiler providing hot water for each lavatory block, and the change of level made possible the heating of the Infants and Nursery departments by a gravity system.

Construction

The buildings have strip foundations and load-bearing brick walls. The Classroom wings are roofed with light aluminium box trusses with adjustable louvred lay-lights under Perspex roof lights. The designs of these were modified from a prototype classroom erected by the County Council. (More recently further developments have been made.)

Windows in the Classrooms are aluminium and of the sliding sash type. Elsewhere windows are purpose made of steel.

The Assembly Halls have steel trusses and roofs are covered with built-up felt roofing on Tentest board and asbestos cement cavity decking.

External Finish

Most of the exterior is faced with multi-coloured Surrey stock bricks with joints pointed oatmeal colour.

*View from South-East*

Classroom wings are rendered externally and surfaced in pale cream Tyrolean finish. Above this, up to eaves level, fluted asbestos sheeting is used as panel infilling.

Internal Finishes

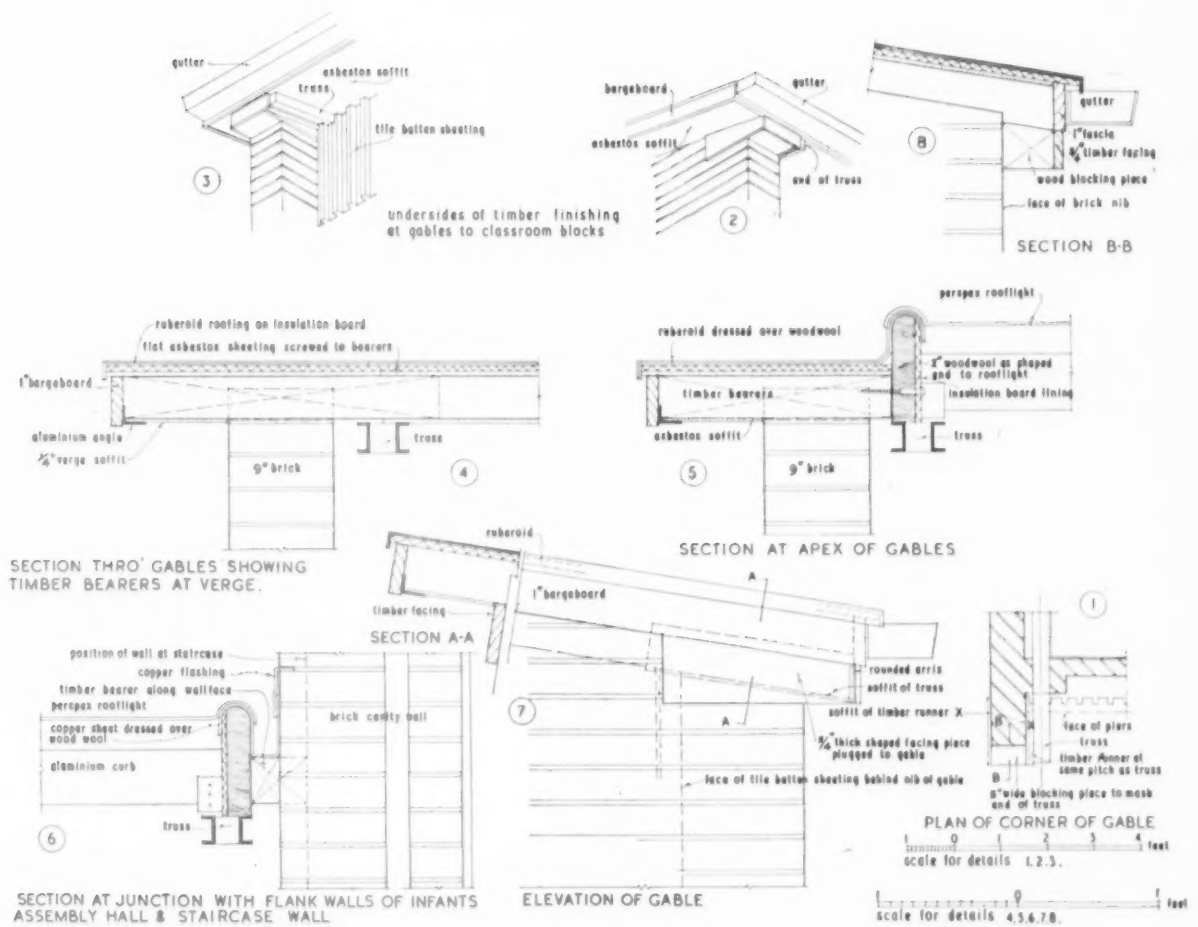
Corridors have cement-glazed walls and marigold coloured granolithic floors divided into bays, to prevent cracking, by precast coloured cement tiles. Classrooms have plastered walls and floors of bituminous tiles with margins and skirtings of coloured granolithic.

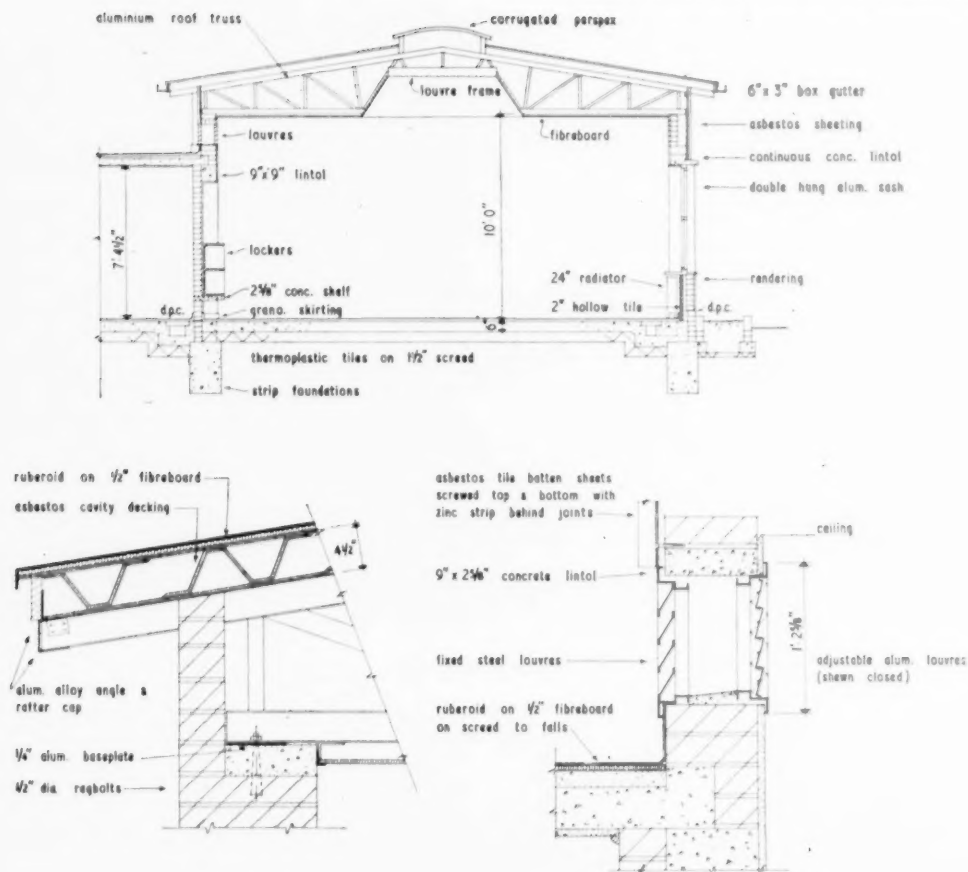
In the Assembly Halls floors are wood-block, window features terrazzo, and walls are partly faced with flint-lime bricks, partly plastered and partly covered with acoustic tiles.



View from South-West

Very great care has been taken in planning the colour-schemes with the object of achieving a warm, cheerful atmosphere with bright colours but without any garish notes. In the Juniors' Assembly Hall, for instance, a number of colours has been introduced with a particularly pleasing result. Cream sand-lime bricks and acoustic tiles have been left in their natural colours; doors are sky-blue in grey walls and maroon in sky-blue walls, with narrow architraves and also balustrades in pale primrose yellow. The ceiling and piers between clerestory windows are creamy white. The floor is the reddish-brown of West African Mahogany.





AYLWARD COUNTY PRIMARY SCHOOL

C. G. STILLMAN, F.R.I.B.A.,
MIDDLESEX COUNTY ARCHITECT
CLIFFORD CULPIN & PARTNER,
ASSOCIATED ARCHITECTS

General Contractors: Tersons Ltd.

Acoustic Tiling: Merchant Trading Co. Ltd. Aluminium Roof Trusses, Asbestos Decking: Roberts Adlard & Co. Ltd. Bricks: H. J. Greenham Ltd.; E. H. Smith (Croydon) Ltd.; Uxbridge Flint Brick Co. Ltd. Built-up Roofing-3-ply: Macartney Ltd. Cloakroom Fittings and Ironmongery: James Gibbons Ltd. Cork Panelling: E. J. Elgood Ltd. Doors: P. H. Barker & Son Ltd. Fencing: Durafencing Ltd. Gates and Railings: Light Steel Construction Co. Ltd. Glazed Wall Finishing: Prodorite Ltd. Paint: Mander Bros. Ltd. Painting: Perrott Grenville Ltd. Playground: Surrey Bituminous Supplies Ltd. Plumbing: G. N. Haden & Sons Ltd. Reinforced Concrete Work: Rom River Co. Ltd. Rooflights: Geo. Farmiloe



Typical Classroom

& Sons Ltd. Sanitary Fittings: William E. Farrer Ltd. Services: Johnson & Tanner; W. Richardson & Co. Ltd.; North Thames Gas Board. Sundry Shutters: Shutter Contractors Ltd. Sliding Aluminium Sashes: The Crittall Manufacturing Co. Ltd. Steel Door Frames: Henry Hope & Sons Ltd. Steelwork:

Matthew T. Shaw & Co. Ltd. Tanking: Durable Asphalte Co. Ltd. Terrazzo Flooring: W. B. Simpson & Sons Ltd. Terrazzo Lavatory Partitions: Malacarp Terrazzo Co. Ltd. Thermoplastic Floor Tiles: Marley Tile Co. Ltd. Windows: Williams & Williams Ltd. Wood Block Flooring: Vigers Bros. Ltd.

Report of the Conference on Tropical Architecture

Held at University College, London, from March 23-27

QUITE one of the most remarkable conferences of its kind ever held in this country, has just taken place at London's University College in Gower Street. It is remarkable, not only for the gathering together of so many races with common interests in architecture and town planning, but of people from countries both of the governed and the governors. It has been an opportunity for an inter-change of ideas between European methods and design for tropical conditions. Such ideas could hardly be a comparison of methods of design, since tropical life is so completely different, and often, existing standards are little different from those of pre-historic Britain.

The Conference is the outcome of the post-war political emphasis upon improving conditions in the under-developed areas of the tropics, and it was fitting that the first speaker, Mr. Carstairs, should be from the Colonial Office to introduce the problem to the architect.

Taking the social and economic background for his subject, he first explained that this emphasis has arisen from an awareness of millions of people of their short comings—materially, socially, and politically, as compared with those of the temperate climates. Modern communications has increasingly made improvement the articulate demand of millions, stimulated by a "steep rise in populations due to public order and better preventative and curative medicine," causing, paradoxically, the threat of starvation.

One inevitably thought of all the old problems prevalent in Britain, derived from similar causes, when he referred to the people of the tropics crowding to the towns because of "an agricultural economy which no longer needs them." The resulting situation he described as "planless, squalid housing, economic uncertainty and social chaos." Surely this terrible misfortune is also our opportunity to bring to their aid, skill and knowledge born from a fight against similar conditions and prevent a repetition of Britain's maladies from an industrial revolution. The clamant demand for jobs in the absence of agricultural work will undoubtedly lead to an industrial revolution.

It must, therefore, be planned and controlled to ensure a satisfactory environment, not only of the work place but of the home with proper community facilities. For, as he rightly stressed, the attitude, not only of millions of people, but of their descendants, to life as they find it depends upon this.

The Conference, which lasted a week, was organized to give members an orderly introduction to problems and experiences in tropical building, for

it was clear that all too little was known. As Professor Sir William Holford, who followed Mr. Carstairs, said in his concluding remarks that, at best, only the nut had been cracked to see what was inside.

Sir William Holford and Dr. Otto Koenigsberger together presented an outline technical study of physical planning problems, followed in the evening by a colourful journey through the tropics with slides by Mr. Johnson-Marshall. They supported the contentions of Mr. Carstairs. For example, Sir William said that while there was no general concentration comparable to Australia's urban population figure of two-thirds of the total for the country, the Singapore Development Trust had to deal with densities of 900-1,200 persons per acre. His reference to the recommendations of a similar conference—the 1931 Paris Conference on tropical problems—were interesting for many of them were still valid today, including satellite development, and of encouraging the use of the narrow street.

Dr. Koenigsberger gave particulars regarding the social habits of the people of India and Pakistan, the problems of heavy rains in areas of non-permeable soils, a warning that public recreational spaces on the scale required in this country, is not applicable to hot dry climates.

The following day, Tuesday, the Conference discussed papers, first on theories about indoor climate and thermal comfort by Dr. Crowden and Dr. Angus of the London School of Hygiene and Tropical Medicine, followed by two papers by the brothers Anthony and Fello Atkinson on building standards and tropical architectural style.

One felt that important as are elementary studies of the physics laboratory of school days to appreciate the scientific implications of tropical climate, more might usefully have been said of the thermal qualities of building materials.

Anthony Atkinson, as housing adviser to the Colonial Office, had, as a result of continual flights over the tropics, a global appreciation of tropical climatic problems affecting building standards. From him the Conference learned how much the absence of documentary help and of regulations hampered good development. The absence of a tropical manual is due to the need for more survey and examination. The whole problem of living varied so much from one part to another, and even within a country where there were sharp changes in climatic conditions, and of social custom, that any generalization would be absurd. Moreover, such a survey

would undoubtedly prove a very big task.

He instanced the cracking effects upon wood materials from the sharp changes in dry and humid conditions over a 24-hour period. Also the important effect variations of cloud cover have upon climatic changes; of the way in which cloud will disperse, absorb, and reflect solar radiated heat and light during the day; cause lower temperatures during the day and conserve heat at night. These variations profoundly influence the architecture of buildings, which includes measures taken to counter glare from the ground, or from cloud formations, which ever prevails.

Another feature was the contrast between the tropical island climate and that for the mainland, where in the former, high wind velocities are experienced from trade winds or hurricanes as compared with inland conditions of the latter. Areas, in the latter, have low wind speeds and call for designs encouraging free air movement and as little absorption of solar radiation as possible.

In hot dry desert areas, big variations in temperature of from 100° F to 70° F creates the custom for using the building by day as a retreat from the bright sun, ground glare and dust storms, and the roof at night for coolness.

On the matter of standards, there was little as yet to go on, and he recommended architects to consult all authorities at all levels at the sketch plan stage, but some useful information could be obtained from U.N.O. Bulletin No. 6. He dwelt, however, upon the question of room sizes and heights, in which the latter proved contentious in discussion though there had been some successful results achieved in Singapore with blocks of flats of 8ft 6in ceiling heights. He contended that such low ceiling heights were justified where there was through ventilation.

Following Mr. Atkinson was a paper by Mr. Petherbridge of the B.S.I., who substantiated points made regarding reflected sunlight by quoting certain tests, which indicated from 10-20 times more reflected sunlight from the ground than from a blue sky in hot dry climatic conditions.

The discussion stage elicited experiences from architects in various parts including sub-letting of large rooms, and even by dividing high ceiling rooms with mezzanines. While that argued against high ceilings, apart from savings in housing costs, a member from Hong Kong feared the effects of overcrowding in rooms of low ceilings. Mr. Concannon from Malaya told of 50 per cent of all Malays living in the

shop-house type, where, owing to illegal sub-divisions, they lived at densities of up to 2,700-3,000 persons per acre. Also rear lanes, if made wide, were encroached upon.

The evening session brought a most interesting and stimulating paper from Mr. Fello Atkinson, who considered modern style no more international than the Renaissance. What was legitimate of earlier forms could, with advantage, be incorporated in good present-day architecture, but he stressed the need for the backward territories to borrow from the west, pending their own development. For example, in the Gold Coast, where he has done considerable work, there is no heritage of architectural style worthy of the name though lessons could be learnt from the traditional "round house" of mud and wattle.

While discussing various physiological problems of design, he emphasized also the importance of an attractive environment, and thought that a satisfactory landscape design could be obtained from the pictorial and emotional qualities in English 18th century landscaping, since trees and foliage of the Gold Coast were similar to those in England.

Discussion time brought fears from Mr. Hope Bagenal for the durability of reinforced concrete, and that much could be learnt from the Renaissance and the enduring qualities of its materials, refinements of scale, and of window and other solutions to the problems of ventilation. The honorary secretary of the Conference, Mr. Adeyemi, of Nigeria, who has, I believe, the credit of first suggesting the idea of having this Conference, called for honesty and not hypocrisy when deciding upon the use of English or local materials, whichever was suitable and right. An amusing, yet telling comment, came from a Jamaican against undue nationalism limiting the work in tropical countries to native architects, when he referred to admirable work done by English architects in his country while he was working (he hoped with equal effect) in England. This interchange, he thought, could be mutually advantageous.

The next day brought members into close contact with actual examples of buildings in the tropics from Mr. Foyle's study of "pagan" building activities, and from Mr. Rutter's explanation of the problems faced by an English firm of architects. Both papers admirably stressed the importance of utilizing inherited skills of the natives such as their capacity for excellent plaster rendering. They both posed questions, as yet unanswered, on how much to retain or reject of traditional methods of construction, or of the value of mud-cement walls and of the urgent need to pool information.

The afternoon session introduced Mr. Ove Arup, and Dr. Gobie of the Timber Development Association. Both were handicapped by having to step into another's shoes at the last minute. Even so, Mr. Arup put over

his faith in reinforced concrete—particularly pre-stressed—as a suitable material for load-bearing elements in the tropics, since they can be prefabricated by skilled labour in the factory. His faith was made the less contentious by acknowledging the soundness of using local materials for non load-bearing elements.

The evening session was devoted to architectural education and training for the tropics, which was introduced by an interesting series of reflections by Mr. Max Lock. He made it clear that the lack of educational facilities in tropical countries placed a large burden of responsibility upon British schools. It was therefore of no value to the tropical student to be taught, for example, the intricacies of Methodist church requirements. On the other hand, as Mr. Everard Haynes pointed out, no student can otherwise gain his statutory registration and, incidentally, associateship of the Institute, which admitted the student to practise in this country. This prompted the interesting suggestion for a qualification, gained under the auspices of the R.I.B.A., which limited practice to a particular country.

The discussion, as prompted by Mr. Lock, also dealt with the importance of linking research with practice and the suggestion for a centre or more for research. That this country has much to offer as a centre, with existing information from a long period of extensive colonial government, was pointed out. This must surely have created a fund of useful information in the archives of commercial concerns with long-standing trading with the colonies, and, in particular, the London School of Hygiene, among other educational establishments.

The concluding day, Friday, of the Conference opened with Professor Gardner Medwyn's paper on the position of the architect in the tropics. This emphasized the phenomenal shortage of architects in the tropics as, for example, in the whole of India and Pakistan, there were only about as many as in Hampstead. His experience showed an utter lack of architectural thought in relating construction and materials to plan forms and of the latter to local conditions. Evidence of this lack was reflected in much of the work of the public works departments—a point substantiated by various members of the conference at discussion time.

Following the business in the afternoon, which brought a resolution (unanimously endorsed) from a "back-bencher" to maintain a standing organization concerned with "Architecture and Planning in the Tropics," was Professor Sir Patrick Abercrombie's brilliant closing address. After his practical suggestion for linking the activities of this organization with the International Union of Architects, he astonished and amused his audience by turns with his remarkable grasp of the problems which the Conference took the whole week to discuss when

he hadn't been able to attend any of its sessions.

This is, of course, due to his lifelong journeys about the world in continual contact with the man-on-the-spot. He referred to the danger of exporting *standard* prefabricated houses from Britain as a feature of our export trade and, amid roars of laughter, told of some responsible people who thought there could be such a thing as a standard house.

The chairman, Mr. Alister Macdonald, then declared Sir Patrick's summary as a fitting closure for the conference. The outstanding problem of all the tropical countries is the absence of documentary data. As the note accompanying the chairman's contribution to exhibition of recent building projects in the tropics says, the architect "has to start very nearly from scratch." A preliminary survey is therefore essential into the climatic conditions, availability of local materials and labour, and of customs, before even setting out to design a building.

DEREK PLUMSTEAD,
A.R.I.B.A., A.M.T.P.I.

IN PARLIAMENT

Local Rules

Mr. Bosson suggested in a question to the Minister of Housing and Local Government that local building Acts, under which the authorities had the right to vary their building regulations, added costs and delays from the inception to the completion of a building. He asked the Minister to look into the matter to see whether uniformity, which was the rule in some other countries, could be adopted here. Mr. Macmillan said that only three local authorities outside London now controlled buildings solely by means of individual building Acts. Most authorities had made building bye-laws based on the model series issued by the Ministry, and these bye-laws could not be varied by the authorities once they had been confirmed except with his consent. This procedure had resulted in a valuable growth of uniformity which he hoped would go further in the revision now proceeding. (Mar. 27.)

Moving Out

Mr. Sparks asked the Minister of Housing and Local Government to what extent population had been decentralized from the County of London and the inner urban areas of Greater London, respectively, since 1945; and what effect this had had upon overcrowding and congestion in those areas. Mr. Marples, the Parliamentary Secretary, stated that up to the end of 1952 about 130,000 people had moved to the out-county estates of the London County Council, and the new towns—of whom the greater number came from the County of London. The effect had been to reduce the popula-

tion of the built-up areas of Greater London from the level reached in 1949. He took 1949 instead of 1945 because in the first four post-war years the population increased substantially as a result of demobilization, return of evacuees and excess of births over deaths. (March 31.)

Rebuilding in London

The recent decision to grant building licences in central London to a total value of £10 millions was discussed in the Commons on April 2. Mr. Kenneth Robinson, who raised the subject, was concerned to urge the need for absolute priority being given to the construction of flats in central London over every other kind of construction. He estimated that by their action the Government were depriving the people of London of 5,000 flats which could be erected for the £10 millions. In St. Pancras 70 per cent of the population was sharing a dwelling, compared with 15 per cent for the whole country, and in the L.C.C. areas there were nearly 200,000 on the housing lists, 70,000 of them in urgent categories.

Mr. Gibson said that no one was opposed to the rebuilding of London, but there had to be priorities because of the housing difficulties in the area. This action by the Government was the beginning of an invasion into the supply of building materials and labour for London. Labour would be drawn from housing sites, and that would be a crime. There was no urgency for this office accommodation.

Mr. Eccles, Minister of Works, said that new construction work was proceeding very well and the aggregate of all types of building had been expanding steadily in the last year. The Government wanted to maintain the rhythm of expansion in step with increasing supplies of materials. The average amount of work fed into the London areas in 1950 was about £17,500,000 a month; now it was about £12,500,000, a reduction of about £60 millions a year, so that the proposed sum of £10 millions did not seem a large amount. The decision to ban buildings other than houses in London was deliberately taken to free workers to travel to the outskirts of London where housing estates were being erected. That was sensible then, but it could not be pursued beyond a certain point.

The Government conceded that there would not be enough work in London in the midsummer and autumn, and one quarter of the building workers of the country lived in the area. The housing programme had been expanding as fast, if not a little faster, than in the rest of the country. Last year 27,500 flats or houses had been completed, but most of them had been started by the Labour Government. This year it was expected that 40,000 would be completed. The increase was greater than the average for the country. But in spite of the repair work and the increase in housing the total volume of work had been de-

clining steadily. Had there not been work connected with the Coronation a number of craftsmen would be free to-day, but much more formidable was the number of buildings being completed, because few licences had been issued for this kind of work in the last two years.

To have excluded London from the blitzed city procedure would have been a bad decision, because offices of the great companies played a most important part in our balance of payments. Every £1 earned by bankers, merchants, insurance brokers or shippers in overseas business was as good in paying for food as every £1 earned by visible exports. The Government in taking the action they did applied the criterion of choosing buildings which would strengthen the national economy. About 30 buildings would account for the £10 millions. The more important were the Baltic Exchange, two banks, including the Bank of England, two insurance offices, headquarters of a coal exporting firm, new headquarters for the Federation of British Industries, and for the T.U.C., and the diamond trade, and a number of university extension works connected with laboratories and buildings where chemistry could be taught. About three-quarters of the £10 millions would be within the boundaries of the city, and it would take about three years to spend this money.

Six licences had already been issued and two were about to be. More large building projects were necessary because this kind of work would keep skilled craftsmen occupied and give opportunity to train apprentices. The T.U.C. building would give much work to stone-masons. About 1,500 men would be occupied at the peak period, and unless this work was started that number of men might leave London or the industry. It would not be possible to erect factories in the area, and to build houses or flats would be a waste of sites.

Aluminium Troubles

Sir Thomas Moore asked the Secretary of State for Scotland what steps he had taken to reduce or remove the condensation and consequent dampness in many aluminium houses. Commander Galbraith, the Under Secretary, informed him that a report on the results of the remedial experiments already carried out had been obtained, and the Secretary of State was considering, in the light of this report, what further steps might be taken in any area where serious condensation persisted. In the case of Ayr burgh, he had already agreed exceptionally to the provisions of thermal insulation at the cost of the Exchequer.

Mr. Woodburn said that the remedy was well-known to the companies who made the houses. This was the result of a well-meant but unfortunately false economy. Cdr. Galbraith said the remedies were being put into practice, and added, in answer to Mr. Steele, that the number of houses affected to

a greater or lesser degree was some 6,000 out of a total of about 30,000. (March 31.)

Home Grown Timber: Softwood Consumption Licences

The Ministry of Materials has issued the following notice:—

In order to facilitate the disposal of softwood arising from the gale devastation to forests in N.E. Scotland, it is hoped that holders of softwood consumption licences will, particularly in Scotland and Northern England, make the utmost use of home-grown timber. In addition, the Ministry of Materials have made the following special arrangements:—

Softwood licences issued to consumers in Scotland and Northern England (the counties of Northumberland, Cumberland, Durham, Westmorland, and the North Riding of Yorkshire) will be endorsed as available "for home-grown timber only" wherever this appears reasonable to the licensing authorities. Consumers who receive such licences may return them to the issuing authority and ask for cancellation of the endorsement only if (a) home-grown timber is not available, or is technically unusable for any or all of the purposes for which the licence was issued, or (b) it can be shown, by quotations, that satisfactory imported softwood is obtainable more cheaply than home-grown, or (c) consumption will actually take place outside the area defined in paragraph 2.

Licensing authorities will only give official cancellation of the endorsement if they are satisfied on one of these points.

It should be noted that any home-grown softwood may be acquired and consumed against endorsed licences, since to dispose of windblown timber it is also necessary to clear the existing stocks of sawmills which are acquiring windblown timber for sawing.

The uses for which licences will be issued under these arrangements will be the same as those for which ordinary licences have normally been issued.

Warning: These arrangements have been made as a result of a national disaster and a serious view would be taken of the abuse of them by the supply, acquisition or consumption of imported softwood against a licence endorsed as "available for home-grown softwood only," unless the endorsement bears a cancellation with the official stamp of the issuing authority.

Housing Progress—February

The number of permanent houses completed in Great Britain during February was 20,118, compared with 16,163 in February, 1952.

In the first two months of 1953, 40,702 permanent houses were completed, compared with 31,855 in the same period of 1952.

Ninety-six reference sheets of indispensable detail information

The question of detail design in modern buildings is one of considerable importance, for many early examples of contemporary architecture, while successful as broad concepts, failed in detail. As a result they have not successfully withstood conditions of weather and use, and have required extensive maintenance. What is needed is greater care in the detail design of the structure at critical points, and a better understanding of the nature and behaviour of the materials used and their application.

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Both architectural students and practising architects will find much of value in this book, showing, as it does, the ways in which architects in different countries, working under different conditions, tackle similar detail problems.

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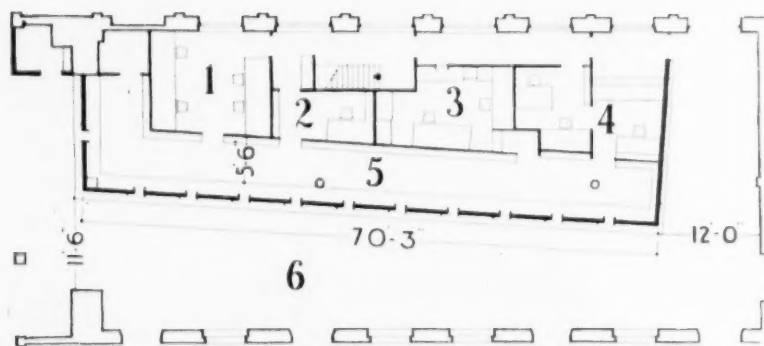
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NEW BOOKING OFFICE PADDINGTON STATION



Ticket Issuing Office

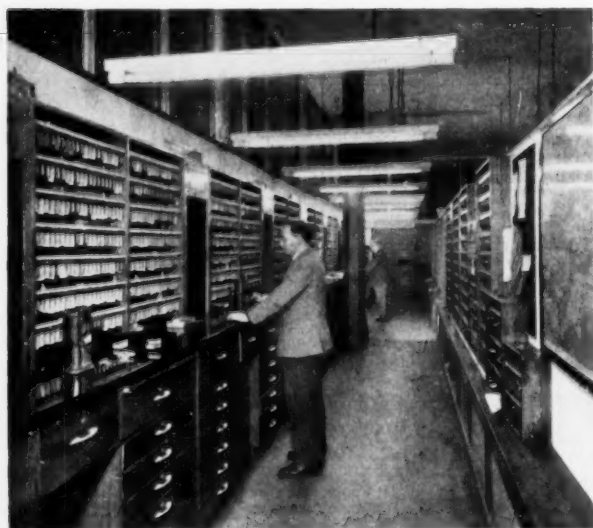
BLOCK PLAN

architects:
H. E. B. CAVANAGH
A.R.I.B.A.

Chief Architect, Western
Region, British Railways

W. R. HEADLEY
A.R.I.B.A.

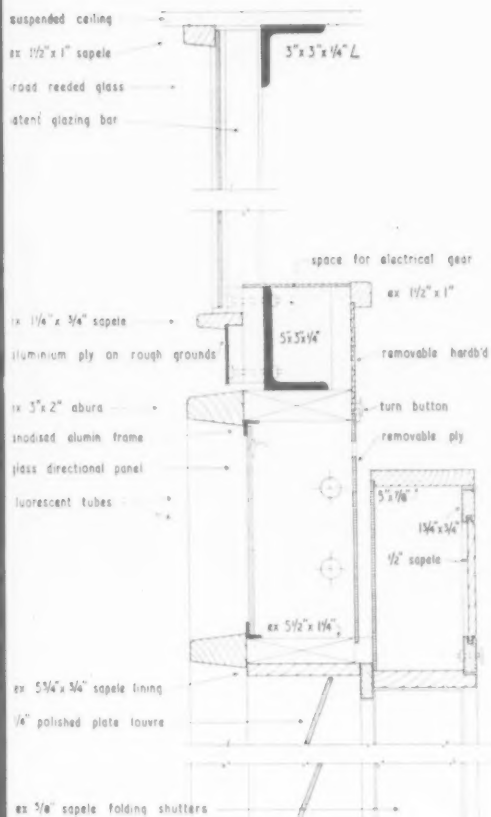
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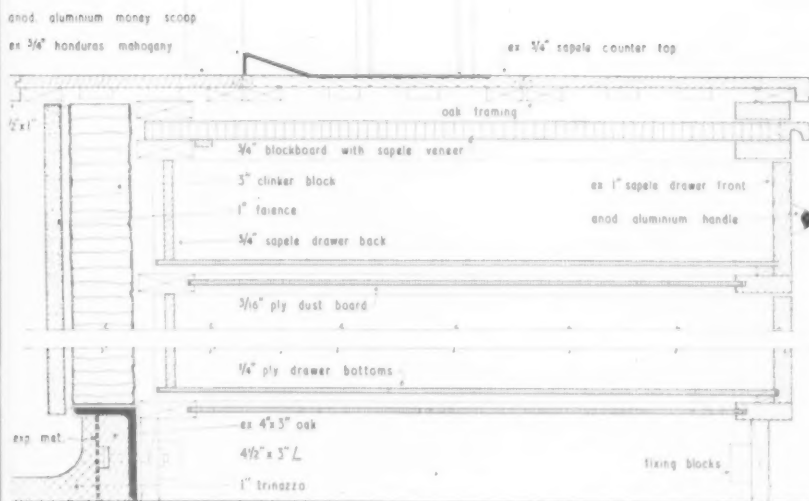
THE new booking office at Paddington Station was completed at the end of February at a cost of £13,500. It replaces the original booking office which had nine ticket issuing windows, with one that has eleven windows and also includes the accounts offices which used to be in the basement.

The accommodation provided, shown on the block plan above, is: 1. General Accounts Office. 2. Chief Clerks' Office. 3. Cashier's Office. 4. Enquiries Office. 5. Ticket Issuing Office, and 6. Public Access.

The main screen is made up on a sub-frame of 4in by 1½in deal, supported on three horizontal mild steel angles spanning between 5in by 4½in rolled steel stanchions at 12ft 9in centres. The counter front is faced with faience tiles on clinker block backing. The panels between the ticket windows are pencil striped Sapele veneered Holoplast with an internal lining of hardboard. The clerestory lighting is in vertically reeded glass in anodized aluminium patent glazing bars. Light fittings, destination indicators, drawer knobs, etc., are in anodized alu-



Typical Ticket Issuing Window



Section through Screen. Scale: $\frac{1}{8}$ th F.S.

minium. The booking office floor is covered with Battleship linoleum.

Internal partitions are framed in deal, 3in by 2in or 2in by 1½in at 16in centres, covered both sides with $\frac{1}{8}$ in

hardboard. All desks and shelves are built in. The total price includes a great deal of preliminary work due to the discovery of dry rot in the timber floor and in the window surrounds.

General Contractors: Marshall Andrews & Co., Ltd. Steelwork: T. C. Jones & Co., Ltd. Aluminium Metalwork: W. Pickford & Co., Ltd. Central Heating: Fretwell Heating Co., Ltd. Faience Tiling: Leeds Fireclay Co., Ltd. Flooring: Lither & Trinidad Lake Asphalt Co., Ltd. Glass Window Louvres: James Clark & Eaton, Ltd. Ironmongery: Stedall & Co., Ltd. Light Fittings: Courtney Pope (Electrical), Ltd. Marble: Anselm Odling & Sons, Ltd. Metal Letters: Signcraft. Panels between Ticket Windows: Holoplast, Ltd. Patent Glazing: Faulkner Greene & Co., Ltd. Special Entrance Door Handles to Booking Hall: Dryad Metal Works, Ltd. Suspended Ceilings: Sundecal Board Co., Ltd. Train Departure Notice Boards: Display & Exhibition, Ltd.

POINTS FROM PAPERS

SUCCESSES & FAILURES OF NEW TECHNIQUES

Extracts from a Paper read at the R.I.B.A. on March 17th

by HOWARD V. LOBB, C.B.E., F.R.I.B.A.



A SHORT while ago I was present at the end of term activities of a school of architecture, and the Head said in his review that one of the highlights of the year had been the bonfire which the students had made of the copies of some of the more traditional books on building design and construction. This remark was greeted with much laughter in which I joined, but the full significance of this error, on my part at any rate, has only come back to me in these last few weeks, when I have been considering the subjects which I should mention here to-night. How often during one's travels does one come across a building which, after being photographed while the paint was still wet, certainly caught one's fancy?

After an interval of many years one finds crazed and cracked rendered surfaces, streaks down the wall due to inadequate overhangs, and a whole lot of minor difficulties of one kind and the other which makes one feel that a very great disservice has been done to the modern movement in architecture by carelessness in detailing and also by the wrong choice of materials.

So much of the forms of modern design is precise and machine-made that it is, to my mind, absolutely essential that this precision should be retained for the life of the building and not suffer from streaks and smudges and other imperfections which are all too often the case.

I think it would be generally agreed that the basic form of modern design comes from middle Europe and America, and I think there are several reasons why details which are eminently satisfactory in these countries will just not work over here. The pollution of our atmosphere, coupled with the relatively high humidity and rainfall, need a very much greater degree of protection than is necessary in these countries. I am looking forward very much indeed to the review which in due course will follow Mr. Edward Mills' visit to America as the winner of the Bossom fellowship, where he is going to study this very problem.

I would say that it has frequently been suggested that the exhibition is the nursery of experiment, and the Festival of Britain South Bank Exhibition buildings were no exception to this. I should like to show you a few slides and to comment on the forms of construction and the difficulties which arose during the period of the Exhibition.

Firstly, however, I would impress upon you that the architects concerned were briefed with the clear understanding that the buildings had only a short lease of life and were often severely restricted in their budget.

Figure 1.—This is an interior photograph in the Power and Production Building, looking towards the Thames. I call your attention to the roof structure, which has quite a big span. I forget what it was offhand, but it is approaching 60 feet. You will see the light framing with the lace-like quality. It is very charming indeed. The architects for this building were George Grenfell Baines and Reifenberg, and the engineer was Mr. F. J. Samuely. Whilst showing this slide I would throw out a word of warning on one of the fashions in architectural design—the placing of large sheets of glass adjoining doorways. Here is a doorway and at the other end of the building is another pair of doors. Between them there is one large sheet of glass. We had twelve serious accidents at the South Bank due to people walking through solid sheets of glass instead of through the doors. Although you may laugh, it is certainly not a laughing matter to see somebody with their face cut about badly, and several of these were hospital cases. I was a little disturbed to see that one of the new schools had followed the same fashion. It is a very dangerous one. What we had to do in the Festival was to put flower boxes inside or outside, or arrange exhibits round the windows to prevent that kind of accident from happening.



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Figure 2.—This is the Fairway Restaurant roof. Structurally it was very interesting indeed, and coupled with the welded steelwork I have mentioned it was one of the most interesting things at the Festival. This was made up of a series of concrete planks with holes right the way through them, through which cables were threaded. They were then jacked up by the Freyssinet system of post-stressing.

Figure 3.—Here is a slide of the end of the Transport Pavilion, showing one of the central spine staircases with the treads cantilevered from them. These treads were pre-cast. The full load likely to come on to them and people leaning on the balustrades, which are supported from the end of the tread, was perhaps not fully realized. We had a bit of cracking down the centre spine of the staircase, and again, probably due to their novel form and to the fact that they were open, a lot of people objected to going up them and thought they were not safe.

Figure 5.—Here is an exterior of the Lion and Unicorn building, a most elegant building, as I said earlier. We had some initial trouble with the weatherproofing of these large windows, with their very thin glazing bars (they were some of the largest sheets of glass I have ever seen); but that might well have been due to the abnormal weather. With a certain amount of attention they stood up quite well.

Figure 4.—This is the interior of the end of the same building. You can see the glazing bars to which I have referred, and one of the hazards that was introduced to guard against people going through what is a large sheet of glass glazed right down to the ground.

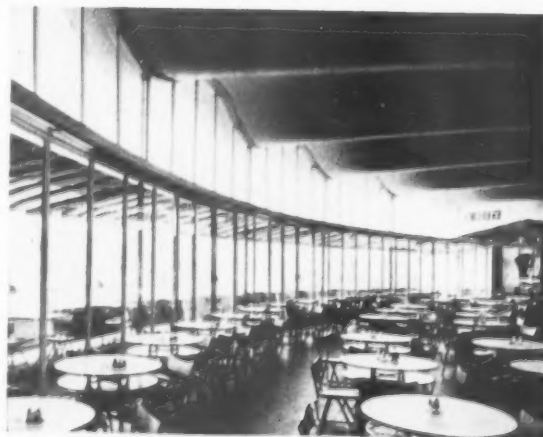
Figure 6.—Here is the Thameside Restaurant, and I call your attention particularly to the roof, which is of a sandwich construction, made up of two 16-gauge sheets of aluminium filled between with boarded granulated cork. The problem of the design of this roof is that it is corrugated, on a circle. We had some considerable difficulty in fitting the joints to joining slabs in consequence, since it was necessary to drill right through and rivet the slabs along the ridge line. Looking at this building a few days ago—



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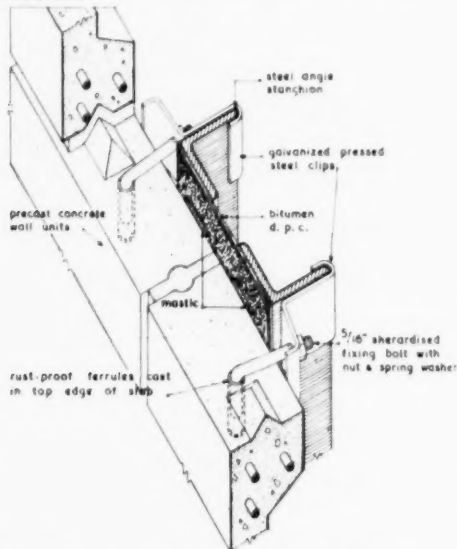


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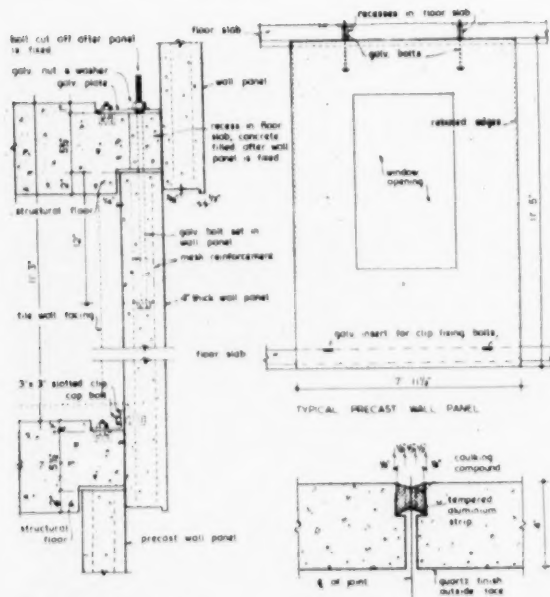
CONCRETE SLABS USED AS THE CLADDING TO A STEEL FRAMED STRUCTURE



8

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DETAIL OF WALL PANEL FIXING
THE FIVE-FIFTY BUILDING, MIAMI, FLORIDA

it is one of the few which have not been pulled down—I was sorry to see it is weathering very badly. It seems as though this type of construction, which has undoubtedly great possibilities, requires quite a different arrangement for the jointing of slabs.

Figure 7.—This is Mr. Aslin's school at Essendine. In considering the use of these precast concrete slabs on this form of construction I am tempted to the view that the principle of utilizing slabs as horizontal planks involving a considerable number of both horizontal and vertical joints is not the answer. This particularly applies in industrial areas. I am not saying this arises at all in the balmy and clean air of Hertfordshire. With the dirt, dust and grime that lodge in those joints there is a lot of streaking of the external finish, according to my observation.

Figure 8 shows how this system is hung back to the steel frame. I have shown it in order that you may be able to compare it with the next figure, which is the development used in the Five-Fifty Building in Miami, Florida, where they have a similar type of slab, but in complete storey heights. The slabs are bolted to the structure purely vertically, and you will see the detail of the joint, where you get a tempered aluminium strip fitted between the two slabs with a caulking compound and the open joint on the outside face. This must surely be a fairly quick way of erecting the slabs.

Figure 9.—Here you see how the slabs of a complete storey type are erected in one.

Most of this slab construction has exposed aggregate finishes which limit the possibility of crazing and cracking, or at any rate prevent these difficulties from being seen except by most minute inspection. This form of surface treatment has been used on a number of buildings, and I should now like to show a series of slides illustrating it. The blocks of flats at Holborn and St. Pancras by Hening and Chitty are notable examples of this technique. They use precast concrete panels with a brick aggregate, and they have weathered extremely well. If you care to examine the buildings—the two on the right are the blocks in Bloomsbury and the other is in St. Pancras—you will see that their general finish compares favourably with the more normal concrete structure. You will also see how they have stood up to the problem of weathering. One interesting point you may also care to study is that the structural concrete work at Bloomsbury was treated with a cement paint, Snowcem, whereas at St. Pancras it was left completely natural. The difference in the two buildings is interesting to observe, particularly bearing in mind the constant maintenance which



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would be necessary to renew the treatment which was carried out at Bloomsbury.

Figure 10 shows a detail of the brick aggregate panels on the Bloomsbury structure. Utilizing the colour of natural stones has been developed to some extent.

Figure 11 shows a combination of texture and pattern. It is a school at Ipswich by Jones and Slater, and you have a light steel frame with external cladding panels about 10 feet \times 10 inches \times 3 inches thick, which are put back in a somewhat similar manner to that which I showed you earlier.

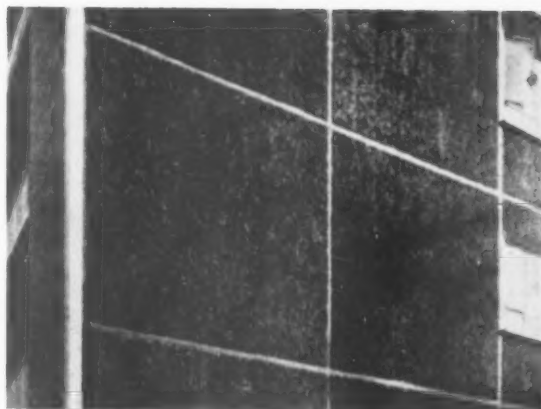
Figure 12 is a mock-up of a panel which it is proposed to use on the ends of the Dartford Technical College which has been designed by S. H. Loweth, the County Architect to Kent County Council. You will agree that with the colour I showed you earlier and the combination of colour, texture and pattern, it can be a very interesting treatment, and it should weather well.

Sand, lime and other similar unfired bricks are being used in increasing quantities, accelerated, no doubt, by the utilitarian standards of finish which are forced on us by the economic position. In almost every job where I have examined these bricks *en masse* shrinkage drying has occurred, causing unsightly cracks which are difficult to deal with subsequently. In my own experience this can only be controlled by most rigorous attempts to keep the bricks dry, both before incorporation in the work and after, and by providing vertical expansion joints in long lengths of walling.

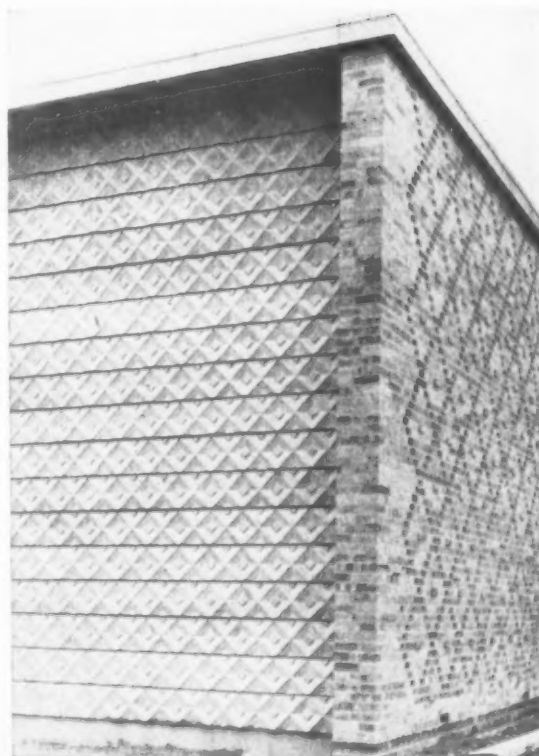
Figure 13.—This shows a block of classrooms in course of construction, using this type of brickwork, and you can see a junction of stanchion and expansion joint on the internal section of brickwork. Note the expansion joint on the external section. Externally, these were covered by the rainwater pipes and had a cover strip. On that particular building there is no cracking, due to these precautions.

I was most interested to see in contemporary journals some consideration was given to the design of expansion joints for various types of buildings. In America they make a detailed study of this, and provision is made in almost every building, partly because of the great variations in temperature. In the Hatfield Technical College designed by Easton and Robertson this type of brick is used with an expanded rubber strip at intervals, butting up against the structural frame. This, coupled with the type of bond which has been used, recognizes the fact that the wall is purely an infilling and should, I think, largely overcome the problems of shrinkage drying and cracking that occur.

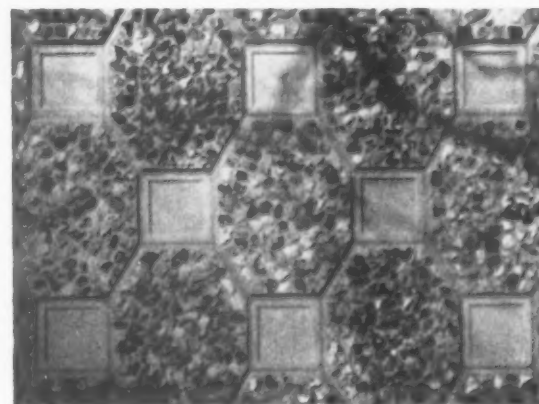
Mortar mixes for this type of brickwork are of very great importance, and I wonder how long it will be before the contractor and the operative both realize that very considerable harm can be done by using too much cement. The quality of cement in this country has improved very considerably in the last ten to fifteen years, but the speci-



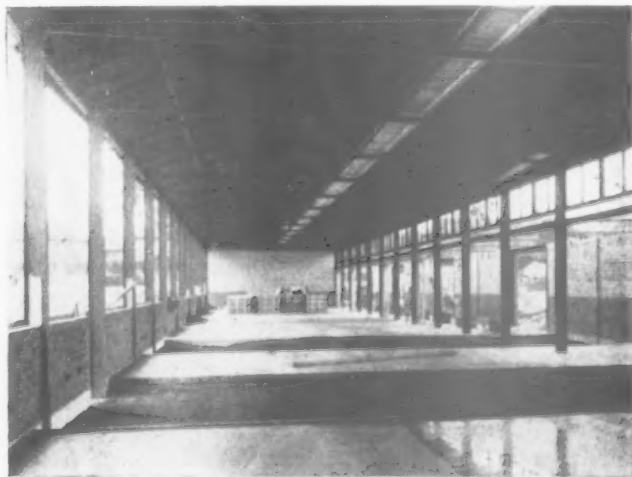
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cations for the mixes in both mortar and concrete work are still pretty well the same as they were ten or fifteen years ago.

Whilst touching on cement, I should like to make a plea for a much greater understanding by the architect of the tests on concrete work. Scientists and our engineer friends go to great pains to develop systems of construction giving us the thin members which we require in framing. But in few cases do the clerk of works, contractors and architect really understand the essential need for the most accurate grading of the aggregate and such tests as bulking of sand and keeping a close control over the slump of the mix.

I should now like to refer to the use of glass. The principle of the manufacture of glass is lost in antiquity. It is probably one of the oldest building materials which is now produced from practically the same ingredients as it was in ancient times.

The largest sheet of polished plate glass in the world was erected in the Power and Production building on the South Bank (Figure 14), and it was just over fifty feet wide. The problem of moving this from the works at St. Helens at four miles an hour with two police outriders, arranging its reception and placing in position on the first gallery of this building, could almost be the subject of a separate talk, and once experienced would certainly put anybody off from trying to use a window of this size again.

You can see in the slide the ingenious methods adopted by the manufacturers for lifting the glass. This standard fitting is used regularly by them, and this is the largest edition they have ever had to make. It is a series of suckers which are fixed to the glass and held there by a vacuum plant. You have a kind of truss at the back which is lifted from a crane. The glass was then fitted into this aluminium frame (Figure 15), which took account of expansion and contraction and so on, and was designed most interestingly by Mr. Samuely, the engineer, and it is supported on two rollers at the bottom.

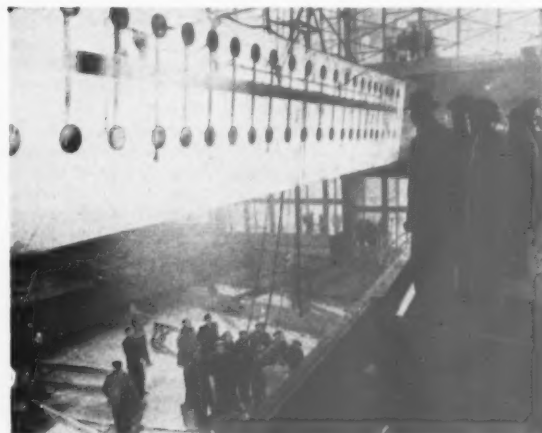
Taking the Ministry of Education Building Bulletin as the basis of assessing cost, you will see that the combined price of glass and metal window and door is considerably less than the price of the adjoining structural wall, and although I am not suggesting that we should live in glass-sided boxes, if properly dealt with there is undoubtedly a great beauty in glass as a building material. Perhaps we have something to learn from the Lever Building in America (Figure 16), where the whole front has been lined with glass and where provision has been made for an electrically operated cradle which can travel up and down the stainless steel mullions of the building, enabling the cleaning of the windows and the glass panels between to be done easily and regularly.

Figure 17 shows the dramatic effect of the block at night, with the reflections on the roadway in the foreground.

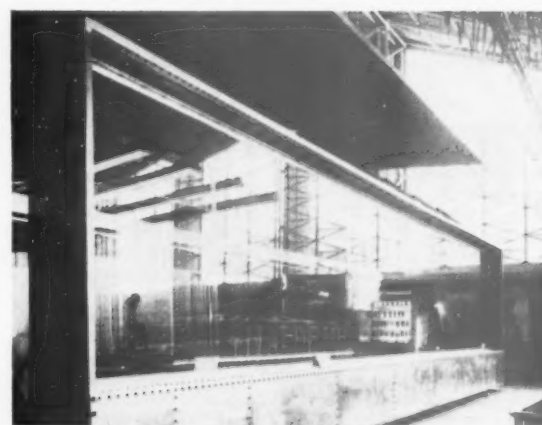
Far too little has been heard in this country of the economics of double glazing. The Carda window has been used and a double glass unit has now been in production for some time. I believe that in a recent school building the heat loss figures showed that the use of double windows enabled the initial cost of the heating plant to be reduced almost equal to the increased cost of the double glazing, and taking into account one year's saving of fuel this would certainly be the case. I feel there is scope here for a detailed study in which the architect, scientist, heating engineer and window and glass manufacturers should all play their part, as anything we can do to save fuel is obviously worth while.

Figure 18.—The use of glass in the Royal Festival Hall on the South Bank is well known to most of you, but thick, polished plate glass in the windows of the upper foyers adjoining Hungerford Bridge reduces the airborne sound to such an extent that it is most interesting to see the trains whistling past a few feet from the window and yet to hear nothing. This figure shows the twin windows and you can see the arches of Hungerford Bridge.

I mentioned earlier one scheme in America for washing down buildings, and I wonder why we as a profession do not try to do more about the terrible problem of the pollution



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of the atmosphere by smoke which brings in its train so much deterioration of our buildings.

Deterioration of the structure can be safeguarded by the provision of proper washing facilities, coupled with care and attention to the detailing of sills, overhangs and the like, thus preventing the stains and streaks which seem to be the fashion in buildings of recent years. Work done by the Building Research Station and this Institute as long ago as 1929 on the allied subjects of smoke pollution and the washing and preservation of stone buildings appears to have gone into cold storage, and I think the recent experience might bring it out again. The subject is well worth while reviewing.

On the South Bank we had five major strikes and over fifty disputes which were referred to the Tribunals, most of the latter being due to the novel forms of construction and the uncertainty as to whether a new material should be fixed by bricklayer, plasterer, tinsmith or plumber, or whether some completely new trade had to be invoked, presumably with a special Union to look after it.

In the last few months of the job, by means of talks, exhibitions and by inviting the men's delegates to attend at some of the progress meetings, we were able to put over the whole job to them. If you were to ask me if there was any one particular event which helped to get the buildings finished in time, I would say it was the week-end visit arranged during the last two months of the contract for the men's families, and the improvement in morale and the diminishing of labour troubles was particularly noticeable. I wonder if there is not a lesson to be learned from this in our normal work of housing and schools. I have certainly tried, by displaying models and perspective drawings in the workmen's canteens and by talking on the site to interest them in the job they are building, and I am quite convinced that it has been half-an-hour well spent. This view is not always shared by the foreman, however, who tends to take the view that the only thing the chaps take any notice of is their pay packet. I don't agree with this and feel much more could be done by the architects which might have an appreciable effect on productivity. I would suggest to you that this is a new technique which is still in embryo.



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DISCUSSION

MR. R. C. BEVAN: It is a very great privilege to have been asked to propose a vote of thanks to Mr. Lobb for his paper.

I should like to comment on one feature which Mr. Lobb has kept in the background, possibly out of modesty; and that is the functional aspect of these new techniques. If I might refer back to the Dome of Discovery, there was a very interesting functional requirement in that Dome, which was thought at one time to be likely to give a little trouble. The Dome was consciously considered from the point of view of excluding solar heat. With the brightly polished surface of the new aluminium, it was felt that no trouble would arise. But someone thought suddenly, "Well, of course, London is a dirty place, and the grime will increase the absorption of solar heat. As a result the interior will become almost unbearable." The question then arose as to what could be done to preserve that bright surface, not necessarily from the simple deposition of dirt which would, of course, be washed away, but from the corrosive effects of the depositions on the aluminium itself. It was suggested that a coat of varnish should be applied to the metal, but again the point arose, would that varnish affect the absorption of the sun's heat, so you see little items like that must be considered in dealing with a new technique.

MR. RICHARD HENNIKER (Fellow) (*who Seconded the vote of thanks*): I came here much more in the guise of a learner than of the knowledgeable person who can use these techniques. I want to take up the point which the proposer made about that.

He said that many did not venture into the realms of the new techniques. It is probably true to say that of those who do venture into these realms many more come from among official architects than from among the private practitioner.

MR. JOHN RATCLIFFE: I should like to emphasize Mr. Lobb's point about climate and atmosphere.

We have to adapt ourselves to our climate more than we have done hitherto in this regard, particularly in cities. Here I should like to make a personal appeal. I deplore the cleaning down of the Norman Shaw type of building, the red and white patterned effect, because I feel that is using

a traditional material in the wrong way. By all means let us have our glass buildings and clean them regularly. But in the sooty atmosphere we have in London and elsewhere we should let the building go dirty. We should not attempt to clean it but should rely upon small areas of brightness to relieve and contrast in other ways.

MR. RICHARD HENNIKER: I understand that Cambridge has been divided into two camps by the cleaning down of the Senate House, which is now so white that even on a comparatively dull day you need your sun glasses to look at it. It is quite surprising how dreadful it looks.

MR. E. D. MILLS: I was interested in Mr. Lobb's comments about Continental buildings, which are to some extent copied here. On seeing some of them I was particularly impressed by the fact that in spite of the more temperate climate and the reduced amount of pollution that arises in places like Switzerland and Sweden far greater trouble and care had been taken in the detailing, even when the conditions were not as severe as we have here. It started me on my own particular line of interest. In Switzerland, for example, things like window sills, copings, and so on, are detailed with very great care, and quite a bit of money is spent on these little points. It does a tremendous amount to preserve the facings of the building, particularly with rendered buildings or buildings with thin slab facings.

In Sweden I noticed in particular that on very few occasions—practically none at all—were buildings allowed to remain with exposed untreated concrete as a finish. I saw concrete canopies, for instance, lined with hardwood with very careful detailing. It must have been an expensive finish but the building I saw was some six or seven years old and still looked as though it was finished only the week previously.

Obviously, detailing of that sort must cost more in the first place, but the saving on maintenance costs must be tremendous over the normal life of the building.

Another point of interest is expansion joints. These are most important and occur in places where people seldom think of them. You will see many cases of very large glass brick windows which crack simply because there are no expansion joints at all, and the glass panel splits after a very short time.

Another point of interest is light load steel construction. I prefer to call it steel knitting. The principal difficulty I find with it is that it is far more expensive than ordinary structural steel and costs a lot more to paint. When you have to paint it the next time it costs even more. One is very tempted to use it, having seen photographs of designs by Samuely, in one's own buildings, but the cost is a difficulty.

There is a danger with the use of materials of this kind of putting them in the wrong place, which brings me to my last point—the tendency to use new techniques for the sheer fun of doing it when they are suitable and when they are not suitable for particular buildings. Steel knitting is a case in point. I have seen it done in buildings where a high dust hazard arises. Very beautiful open lattice trusses make a wonderful place for collecting dust. In the same way, in the early days of shell concrete it was badly misused and still is in many cases. I am afraid pre-stressed concrete will also be misused, simply because of this love of using new techniques for the fun of doing it.

MR. C. H. ASLIN, C.B.E. (Chairman): Mr. Lobb's last point about co-operation with labour is of extreme importance. If labour knows what it is doing, and what it is for, there is a tremendous response. When I first started to use colour, which meant instead of gallons of cream paint all over the place a large variety of colours in relatively small pots, the people who made the paint thought they were dealing with a stupid architect who did this to make things awkward. Why couldn't he have gallons of the same colour? With the manufacturers' approval, we arranged a trip and took two bus loads of the chaps down to the finished jobs where their paint had been used. When they saw the result, with children in school obviously enjoying and appreciating it, there was no more trouble about half-pints of paint.

Perhaps I might be permitted to mention a rather heretical comment by Mr. Henniker about official architects

having easy clients. No greater mistake could ever be made. There are such a lot of them, and you cannot ignore the lot. It is perfectly true, however, that an official architect has more opportunity of using new techniques than a private one. If you build twenty schools a year you can afford to take a few chances. If one falls down, it is only one-twentieth of the lot, whereas if a private architect is presented with such a job by a local authority or a private client, he obviously cannot afford to go messing about with it. He may not get another. It is quite natural, therefore, that the pursuit of new techniques is more easily done in large offices with large and continuing programmes than in relatively small ones with one client and one job.

MR. LOBB: Mr. Bevan's point about the glare on the Dome reminded me of a frantic telephone call we had from British Railways saying that the train drivers coming out of Charing Cross could not see the colour light signals because of the sunshine reflected off the dome. What were we going to do about it? Of course, with the masterly inactivity that can happen in a Government department, we let the weather do it, and in a few days the problem no longer existed.

Mr. Eckersall touched on condensation, and he was largely answered by a subsequent speaker. In exhibition buildings you have large doors, the traffic of people, the constant circulation of air, and reasonable ventilation. We did not, in fact, get any condensation from the inside of the glass surfaces. When we were struggling in the worst flood, I think, for eighty years, when it did nothing but rain on us just before the opening, the very high humidity did cause a lot of trouble, and it slowed down painting operations and work of that kind. But after we had got out of that bad weather, with the ventilation and constant moving of traffic we did not have any more trouble. I brought in glass largely because it is cleaned easily, being completely impervious and highly polished. Possibly if we cannot do anything about smoke pollution we ought to do something about buildings that can be easily cleaned.

Mr. Samuely raised a very interesting point as to how far new techniques should be put into operation. He and I separately and sometimes together have done a number of them. I thought it was largely going to be answered by my saying it depends whether you are a county architect or a private architect. Mr. Aslin has answered that question himself. It is the size of the programme which is available to the county architect. It is obvious that you have to take the best possible advice from the Building Research Station and then try the thing out in small areas and judge from the results. You have to try all those experiments before doing the thing in a big way.

Maurice Jay commented on washing down buildings, and I agree with him. There are many reports in the library going back to 1929, and I looked at some of them this afternoon, including some very interesting photographs produced in consultation with the Geological Survey and the Museums. They show the effect of smoke pollution and the washing down of buildings. If Mr. Henniker would look at the Goldsmiths' Hall, to which Mr. Bird referred, he would probably agree that the regular washing down of a building with plain water is very desirable. It gets off the soot and sulphur which can do so much harm to the structure. The Cambridge buildings have been scrubbed to such an extent that they are probably whiter now than when they were first built. That is quite different from cleaning off the accumulation of soot which, mixed with water, forms into a weak solution of sulphuric acid and eats its way into the stone, causing all kinds of problems.

Mr. Mills referred to lattice trusses. They can be most interesting, particularly when developed in the form of space frames dispensing completely with the tie bar at eaves level. I have in my mind a gymnasium which is being built at the moment in the north where there is a most charming general effect and where the cubic content of the building has been appreciably reduced over what would normally be the case without any feeling of oppression due to the complete openness of the roof spaces. So far as the painting of these trusses is concerned, if you are going to have that kind of framing anywhere—assuming you have a steel frame in mind, it is easier to paint.



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THE MODULAR SOCIETY

Summary-Report of a Public Discussion on Modular Co-ordination Held on March 4 at the Royal Society of Arts

The Chairman, Alfred C. Bossom, LL.D., F.R.I.B.A., M.P., opened the meeting by welcoming those present and said that, following the introductory talks given by the speakers who were representative of different interests in the building industry, frank opinion and discussion would be welcome, and should indicate the direction in which the Society might proceed, without being dogmatic or final at this stage.

The general discussion was then opened by four speakers from the platform. Mr. D. Fraser, Managing Director of Troy & Co., Ltd. Mr. S. Johnson-Marshall, B.A.R.C.H., A.R.I.B.A., Chief Architect to the Ministry of Education. Mr. F. J. Samuely, B.Sc., A.M.I.C.E., M.I.Struct.E. Mr. W. A. Balmain, B.Sc., A.R.I.C., Joint Managing Director of Unesco, Ltd. Mr. M. Hartland Thomas, O.B.E., M.A., F.R.I.B.A., M.S.I.A.

Mr Fraser said his principal interest was finding a method which would avoid cutting and waste on sites, and that he thought that would be one of the benefits that should accrue from the work of the Society.

One of the major difficulties in introducing new methods into the building industry was objection and resistance met from the tradition-bound craftsmen through whose efforts the industry had developed. They were reluctant to accept new principles since their skill was their main asset and they feared unemployment through the introduction of new methods. But the needs of the national building programme should ensure continuity of employment, and increased productivity on the sites was essential. Only simplification of building techniques could achieve this, reduce costs and thus encourage greater demand for more building.

Shortage of reliable foremen was one of the principal factors causing the slow pace of building on site. The post-war generation suffered from the break of up to ten years in their training and experience, caused by the war; any methods introduced that would simplify their difficulties in setting out, etc., would render control of site labour easier, increase productivity and reduce costs. The co-ordination of dimensions implied by application of a modular or grid system should help to eliminate cutting and waste on site, and also save time.

His company had been engaged on general building—Council flats, schools and offices. A great practical difficulty was securing guaranteed delivery of components to the site to match the demands of phased building programmes. Another factor causing delay was lack of adequate information in the early stages of a contract. The first trouble was taking off schedules of components for placing orders with suppliers. For example one plan for 100 flats required 18 different door-frame sections, whilst another only stipulated eight. In the first case probably a few dozen of one section and hundreds of another were required. A supplier would produce the bulk quantity first, and when the smaller quantities arrived later, though they were required at the same time in the building programme, they were difficult to recognize and store, the upshot being they cost a great deal more than they were worth.

Nowadays builders could no longer afford to sink capital in carrying stores and stocks, or making up special items. It was all needed to finance building itself. Standardization of components should facilitate properly phased deliveries and eliminate storage and handling problems with all their inevitable costs. It would be of inestimable advantage if architects could supply schedules of components when contracts were signed, and also give sheets of typical details.

Co-ordination of the local building byelaws eliminating the existing differences between one council district and another would also help. For example, a standard practice in the design for lintels; if foremen on sites had an agreed

schedule of reinforcement set out by an engineer for casting lintels much time would be saved.

Despite criticism of the prewar builder it should be remembered he had sold houses cheaply at a profit. He had achieved cheapness by standardization of components; the unfortunate monotony created by repetition could be avoided if architects gave a lead in design. This could be shown by the variety of articles produced by any six lads independently making something from the same pieces of Meccano; or the fact that though the Ministry of Fuel and Power had introduced standard 16in and 18in fireplace openings as an economy measure, 120 registered designs were available. This standardization had reduced costs throughout the fireplace industry.

So standardization of components need not mean monotonous repetition, and was of great advantage to the builder, enabling him to apply assembly belt principles to the delivery of materials at the sites. Materials could be ordered more easily, handled and stored at sites more economically, and built in faster; thus improving output per man on the site and so reducing costs and enabling the industry to do a greater volume of work.

He himself had no experience of working to a module or grid in traditional building, but his foremen thought there would be no disadvantage in setting out, and definite advantages in checking diagonals for square, etc. Probably a system of using full-size templates marked off to the module or grid would be developed. All agreed that standardization of components to set dimensions would be of great advantage on sites. However, whatever module or grid were introduced into building, the foremen would have much to say about it, and would do so in their own builder's language.

The Chairman commented that although about 75 per cent of every American skyscraper was prefabricated, all were different.

Mr. Johnson-Marshall said the Modular Society had made a flying start thanks to the stalwart efforts of Mr. Bossom and Mr. Hartland Thomas; their work would be of immense value because modular co-ordination was overdue in Great Britain.

The tendency over the past 30 years had been to impose standardization in fact, owing to increasing quantity-production by machine of components off site. Unless skilfully used mass production would be an anathema, so the core of the problem was to secure the greatest advantages available through standardization, whilst avoiding as many disadvantages as possible. Modular co-ordination was perhaps the most promising available medium through which this end could be achieved; but it was only one of the major factors in obtaining cheaper building, and must be studied in closest conjunction with the others.

He and his colleagues had no vested intellectual interest in any particular module, nor in the exact use of modules, but were trying to approach the problem empirically and in stages. They had devised a system based on an 8ft 3in module, and were now engaged on a series of four systems—three at a 3ft 4in module and one at a 4ft module. It was too early to dogmatize about such problems as what happened at junctions between modular units.

There were two stages in the approach to the problem, one to encourage people to work to a common module—for the moment the best one seemed to be 3ft 4in; and two, after practical experience of the problems encountered in various materials and techniques, to make a critical review, and then make revised versions of the components, preferably interchangeable and interconnecting. The 3ft 4in module was favoured in the reports issued by both the Royal Institute of British Architects and the British Standards Institution.

He and his colleagues felt the next phase should be practical, rather than theoretical investigation. At least 200 post-war buildings had been constructed on a true module, i.e., a module used for all the main components, and which runs along and across the building. They would like a representative selection of those buildings examined to discover what had been contributed by them in terms of time, cost and quality, manufacturers to be asked not only what actual savings were made, but what the potential savings were. Also the architects' opinion, and users' views.

The problems of modules were approached from different backgrounds—the speakers represented four; all felt keenly the need for modular co-ordination, some would have very differing solutions in mind. The prerequisite to successful modular co-ordination was a common attitude of mind; the quickest way to establish that and resolve differences was for a small team, representing all viewpoints, to engage in a realistic study of actual buildings.

Mr. Samuely said he felt strongly about a few points amongst the many related to the problems of modules which had occupied many people's thoughts for some ten years. His was not necessarily an engineer's viewpoint.

He felt there was confusion between module standardization and the use of planning grids, which were really unconnected. A module on which various sizes of units for building were based was necessary even if there was no standardization. It would be so useful if brickwork, windows, doors and other components did fit together.

Standardization was certainly important, but it was a matter of degree, and depended upon the medium in which it occurred; there was a significant difference whether it was metal, timber or concrete articles that were to be standardized. The more refined a material worked, the more standardization was necessary; for example, steel required many standards to reach the best production methods for many useful units, whilst with concrete a smaller number of standard units would give maximum economy. It was necessary to decide on its merits how many units were required to be standardized in any given material.

Standardization had both advantages and disadvantages—it might result in problems of unwanted space and over-large units. The module must serve the standardization to ensure that components fitted, as he had said. He therefore favoured a small module, which could not be further subdivided. Advocates of the large module wanted one of 3ft 4in; he had heard it said that it only needed a very small difference in the thickness of the joint to make nine bricks go into it, making 4.4/9ths inches a suitable size for brick and joint. You could divide that lovely module into ten parts, giving 4in, but what you then did with that difference of 4/9ths of an inch he did not know.

He disliked a large module because people would subdivide it in different ways. An eighth of an inch was probably a minimum module, but impractical, the practical range was 3in or 4in; it should be possible to determine a module on which to build in that range. It should be remembered also that the one thing already standardized was the brick, and that must be taken into account. If 4in were determined, for example, then bricks must be 4in, or a window plus joints a multiple of 4in, doors a multiple similarly, concrete columns would be 4, 8, 12 or 16in, etc. In that way everything would fit well together and there would be a minimum of waste at the site.

In standardizing one must study the materials selected and standardization must be effected to the degree useful and necessary from both the consumers' and producers' point of view; but in all cases the module—multiples of 4in—must be maintained. Of course, there were things that were not accommodating: large units such as 2-ft building board, or 3- or 4-ft wood slabs. That problem would have to be tackled. But most materials could be brought into the scheme once a module of 4in or similar was determined.

Mr. Balmain said the immediate compelling reason for adoption of dimensional co-ordination in building was reduction of costs. Everyone would agree that. It could not succeed unless applied also to the traditional building industry, because prefabricated building played so small a part on the whole.

He disagreed with Mr. Johnson-Marshall that further

theoretical discussion could be abandoned; practical examination of erected buildings was essential, but so was theoretical discussion if a method for applying dimensional co-ordination to traditional building was to be discovered. The buildings available for inspection in Great Britain, though many were built on a grid, were almost entirely of prefabricated construction.

Agreed basic dimensions would certainly achieve cost reductions, mainly in four ways; mass production of parts—which was important. This would reduce total stocks carried by builders' merchants and manufacturers, since the range required to be in stock would be reduced. Site assembly costs would be reduced consequent upon easier assembling of dimensionally co-ordinated parts, and there would be elimination of waste due to cutting by traditional methods. Further, costs of planning buildings and of measuring quantities would be reduced. The magnitude of these reductions could not be forecast, but they might be particularly large in the fields of mass production of parts and site assembly.

An excellent example of cost reductions possible due to mass production was the brick—a reduction that enabled brick building to be competitive at present.

Previously labour had been cheap and materials dear; that situation was now reversed, and would not revert—rather the contrary. Therefore efficient use of labour, in factory or on site, was essential to reduce building costs.

On the next point he agreed with Mr. Samuely, and differed from the architect and builder; the distinction between a module and a planning grid from the point of view of manufacturers of building components was insufficiently appreciated. A module must be a small unit to be of value to the manufacturer of component parts, modules of over 36in meant nothing except in terms of planning grids. To be of value to the manufacturer dimensional co-ordination must give the requisite sizes of components and the increments in size applicable. In fact, the module was the increment, and must be of a size suitable for use in connection with such items as floor and roof tiles or windows and doors. It must be small to give flexibility to design, but not so small as to introduce undue complexity. There were good reasons for adopting a basic module of 4 or 5in.

The planning grid could be based on any convenient multiple of the module, and might well be standardized at some figure such as 40in. Several standardized planning grids might be necessary for the different types of building, and for different methods of construction, all related to the basic module.

For convenience the module should be the same vertically and horizontally. He had referred to the module as an increment in size because, unless the wall thickness was related to the modular dimension, the absolute size of any component might not be a multiple of the module. But if the wall thickness were related to the module then external dimensions of components could also be multiples of the module. This indicated the advantage of standardizing wall, and if possible floor, thicknesses in terms of modular dimension. No serious technical problems would arise by standardization of more than one thickness.

The 4-in module had the advantage of covering any existing materials with dimensions of an even number of feet—for example, wallboards. Because wallboard was produced at a multiple of 4in, when it was used to line a modular space the strips cut off could be utilized because they too would bear a modular relation. A 4-in module also met the trend for a vertical increment of 8in. Its greatest disadvantage was not conforming to brick construction; in practice modification of brick sizes might prove difficult. In prefabrication a 5-in module had been found convenient, because on a 40-in planning grid it reduced the number of increments to eight—or four if a two-module increment were used; but he did not think 5in would be as satisfactory for all purposes as 4in.

The chairman said the four introductory talks provided a good basis for discussion, at the conclusion of which Mr. Hartland Thomas would give a summary of the proceedings. Mr. D. A. Birchett, A.R.I.B.A. (Company Architect to Shell Mex, Ltd.), said an arbitrary distinction seemed to be made between prefabricated and traditional methods of construction.

(Continued on page 469)

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L.R.

Continued from page 468

tion. The national building programme required co-ordinated effort using both. It was useless to reduce the prefabricated system of component parts if they were not applicable to traditional building also, as they were made of materials used equally in both, for example, wallboard. The problem must be considered as a consolidated co-ordination of all known building methods.

Mr. Edgar Hoenig, L.R.I.B.A., said that architects did not appreciate that the iron and steel industry had forced the use of planning grids upon engineers at an early stage; the dimensions of these grids were controlled by the materials concerned, by imposed stresses, and by economy, and were large—15, 18 or 24ft., etc.

Reinforced concrete construction eventually resulted in change of design. At that time the economical relation of frames to surrounding walls was disregarded owing to relatively low costs of labour and materials, but subsequently it became a major obstacle to the fixing of an overall module for the building trade.

The discrepancy between the planning grid of the architect and the constructional grid of the engineer was that the former used the area between the grid lines and the latter the grid itself, and the points of intersection. But a point had no dimension, whereas the stanchions and beams of a frame had in plan two dimensions, centred respectively on the lines of the grid or the point of intersection.

For economical reasons the dimensions in plan of external walls or partitions differed from those of the frame. To achieve an economical relationship should the grid be applied to the walls or to the frame, or in part to each?

Monolithic box or frameless construction raised other problems. He was the patentee of a precast concrete system developed on an 18in module; but he had re-examined it on a 20in (or half of 3ft 4in) module and found that as good, if not better.

Mr. Raymond Parmenter said the problem of reducing variety to order had been dealt with in the engineering trades, such as the electrical industry, where it was far more complex than in the building industry. The number of varieties had sometimes been reduced by up to 40 per cent by classification and coding of existing varieties, and then maintaining only those necessary.

He would advise the building industry to do what was done by the dietitian who first required his clients who wished to slim to record everything consumed for a fortnight. When they returned for his further advice half his work was done; similarly classification and coding in the building industry would automatically promote simplification.

He deprecated the formation of committees; his experience of standardization committees in industry was that their productivity was even lower than that of the building industry—probably the productivity of a modular co-ordination committee would be still less. He would further advise that an individual be appointed to effect the detail work and report back to the committee afterwards: he would recommend an engineer who knew the field rather than a builder.

Also the committee must not be afraid to make decisions—and the more wrong they were the more they must be adhered to. The decisions for the railway gauge and for making gramophone records rotate at 78 were probably bad, but were better than no decision and had been maintained for a long time.

Mr. John R. Bicknell said two types of module had been mentioned, one essentially based on thickness of materials or walls, about 4 to 5in, the other, defined as a planning grid, based on column centres.

The module was a small indivisible dimension, to which dimensions of traditional or solid structures might be related directly, without the introduction of a planning grid, except where standard doors, windows, beams or panels were used. Framed structures, however, must be related to a panel grid, with structural super-grid if necessary, of which the dimensions might vary according to the type of structure envisaged. Relationships between subsequent dimensions must be considered and could be of the order of arithmetical, geometrical or Fibonacci progressions. Panel

dimensions must be modified to allow for junction strips, mullions, door frames, columns, etc.

Modular planning affected all aspects of planning and design. Many recent non-traditional structural systems had been adapted to pre-war traditional designs, whereas they required their own planning form. The advantages sought were improvement of quality and space standards, coupled with reduction in time and costs of building. To achieve these ends full mastery of methods and materials by designers was essential, which could only be achieved by simplification.

Mr. P. A. Denison (Manager, Board Division, Cape Asbestos Co., Ltd.) said he would relate his comment to a specific type of component in an endeavour to be practical—building board. It was sometimes suggested that the 8ft by 4ft dimension was a complication.

Planning for the use of cut-off strips, instead of wasting them, could overcome the problem without necessitating a module, though recessed ceiling panels might be required to use the strips as perimeters or joints. If completely flat ceilings were required, using ceiling board, probably 3ft 4in was the maximum practicable size as a single panel, because a man could not stretch more to handle a larger component. He had come to this conclusion by practical experiments.

Mr. A. W. Russell spoke as a member of a company manufacturing raw materials for the building industry and pointed out that such materials often conditioned the building components made from them. For example, the 4ft square plasterboard was conditioned by the paper, wood, etc., composing it. From that aspect he agreed with Mr. Samuely and Mr. Balmain that a small module facilitated alterations in process by the manufacturer. Modifications of 4in were easier than the larger ones that might arise if a 3ft 4in module were agreed.

Mr. E. Goldfinger, D.P.L.G., L.R.I.B.A., said that from the architect's point of view differentiation between planning grid and modular co-ordination was important. The planning grid was related to human measurements wherever they related to building. The Japanese mat-units were a classic example. Planning grids had advantages both on drawing board and site, and for the translation of drawing board experience on to the site in a simple comprehensive way.

In planning grids tolerances were not necessary; but in relation to modules considerations of tolerance were important. For example, 8ft by 4ft building board had no effect on the planning grid, and had to be cut to fit. Where co-ordination was required was in cutting so that the strips could be used.

It was important not only to remember that different modules may be required for different materials, but that co-ordination between the modules of different materials was also important. Further, various classes of fittings, like baths and sinks, could be standardized at a common size for greater convenience.

Mr. H. T. Swain, A.R.I.B.A., A.A.Dipl., said he had used an 8ft 3in grid in buildings that were partially prefabricated and partially traditional. He had been very impressed by the practical outlook of Mr. Hartland Thomas's original paper to the Society, which expressed the views of people actually concerned with dimensional co-ordination in the building industry.

He would support the suggestion of Mr. Johnson-Marshall that the first job was examination of different types of non-traditional systems of building in relation to the programme they were designed to fulfil. Unless the minds of architects and manufacturers were educated towards understanding the problems of dimensional co-ordination no pronouncement by the Society would affect the building industry, so that education was the first task, and should commence within the Society itself. Perhaps coupled with examination of the buildings a series of papers by those concerned with them could be arranged.

Mr. J. D. A. Carter (Director of Carter & Co., Poole) spoke in favour of a vertical module because it provided as much opportunity as there was in the horizontal plane for saving cutting and waste, and standardization in section was now as general and as widely accepted as in plan, and the same human conditions applied vertically as horizontally.

Mr. G. Laurence drew attention to a 3in module as opposed to 4in in relation to brickwork. Adoption of a 4in module would break down the scale of brickwork; it would necessitate a brick face of 8in by 4in*, as against the present 9in by 2½in, which would be awkward. The alternative 12in by 6in brick would be difficult to manufacture and also to handle on site, which would increase costs.

Mr. M. Lee, A.R.I.B.A. (Architects' Branch, Ministry of Education), said one speaker had stated a principal reason for dimensional co-ordination was to reduce costs, and that one benefit would be reduction in the number of types required to be stocked, and had recommended a minor module of 4 or 5in. He would himself like to plead for a major module also. He thought such a major module which could be either multiplied or subdivided, and which was co-ordinated to the minor module, would avoid the multiplicity of sizes that might arise from use of a small module only, and would result in a discipline in planning and production that must lead to simplicity and economy.

Mr. W. A. Balmain said he had not intended that the module he recommended should interfere with the use of a planning grid, but that any grid must be associated with the module. Subdividing a grid and multiplying a module were the inverse of each other. In making units to modular dimensions commonsense and practical experience limited the number of available increments that were actually employed.

Mr. M. Lee replied that nonetheless the multiplication series would have to be determined to make it common between various manufacturers, or general modular co-ordination would not be achieved. Therefore the double discipline of related major and minor modular dimension was needed.

Mr. W. A. Balmain said sizes of larger units such as doors or windows had already been broadly established by practical building experience; what was now required was co-ordination of the various dimensions that had been developed by custom. The controlling influence of a planning grid was also necessary, but it need not be limited to one grid. Handability was another factor controlling the size of components.

Mr. George Fejer, Dipl. Ing., M.S.I.A., said he would submit that if a 3in or 4in module were adopted, items like doors or windows would not, in fact, have net dimensions to exact multiples of that module, taking into account detail-design, overlap, tolerance, etc.

Mr. C. B. Crow (Messrs. Beversand Co.) entered a plea for the building user, who had not been previously considered. He thought an industrialist, for example, would be helped by definition of a planning grid, or "mega-module," so that he would know if he planned in accordance with it his building costs would be kept to a minimum, whereas at present through ignorance he was liable to select sizes that did not work out economically. He thought the industrialist, the hotelier, and the big builder should have a voice in determining the module.

Mr. W. S. Brydon (Manager of Celotex Technical Service Department) considered that full consideration must be given to the production problems of building materials before advancing very far with discussions on a suitable module. The academic theories of the architect and engineer might be mathematically correct, and even acceptable as a practical proposition by the builder, yet conflict with the production of the building material.

Further, while certain modules might show an apparent economy in planning costs or billing of quantities, or even a theoretical economy on site work and construction, such might not be the case in practice. For example, the only difference between manufacturing a 9in brick or, say, an 8in brick, was the amount of material contained therein, and as the labour and handling costs would be similar, this smaller size would result in a higher cost per area of brick, and in turn a higher cost to the consumer.

Similarly, the majority, if not all, insulation board plants produced a continuous board 12ft wide, which was then cut to various lengths. Hardboard plants and presses varied

from 12ft to 16ft in length, and from 4ft to 6ft in width. To meet the requirements of a 3ft 4in module, it would be seen that existing plant would have to be scrapped and new machinery designed to produce modular units. The cost of this changeover would be fantastic, and beyond consideration.

To counter the obvious argument that the existing insulation board plant be adjusted to provide a 10ft width, Mr. Brydon pointed out that this would result in a 16 per cent drop in production, with a consequent increase in cost per square foot of board. The same applied to hardboard, where the production drop would vary between 16 per cent and 33 per cent, according to the size of press.

Another point was structural strength: many materials were designed to have a strength suitable for 16in or 18in centres, therefore any increase to 20in centres as indicated by a 3ft 4in module, would necessitate a revision of existing manufacturing specifications, such as an increase in thickness, or alteration to the basic material content, either of which would involve increased costs liable to outweigh the anticipated savings.

Mr. Hartland Thomas said that he would leave the impartial summing-up to the official report which would be issued to members, and himself give a tendentious one in order to get ideas into sharper focus when discussion was resumed at the next meeting on April 9.

There was wide agreement that modular co-ordination was desirable and should, if possible, be put into practice. Opinion was, however, divided upon the right size for the module, whether it should be small or large—the hand-span or the arms-span. In his view both were needed. Four inches had been advocated for the small module, and the Society should consider this figure very seriously, for if it were adopted we could readily take advantage of ten years' American development of a 4in module, and this would also help our trade with dollar countries. The United States had, for example, a modular brick of 4in x 8in on bed, by three courses rising 8in. The large module should be a multiple of the small one; 3ft, 3ft 4in and 4ft had been proposed, which were all multiples of 4in, and he would like to see them adopted together as a series, with the addition of 2ft plus or minus 8in for components designed primarily for use in the vertical plane. The question then arose whether such a system would give manufacturers the required simplification of sizes, or whether conversely more variety could be accommodated to give greater flexibility for design.

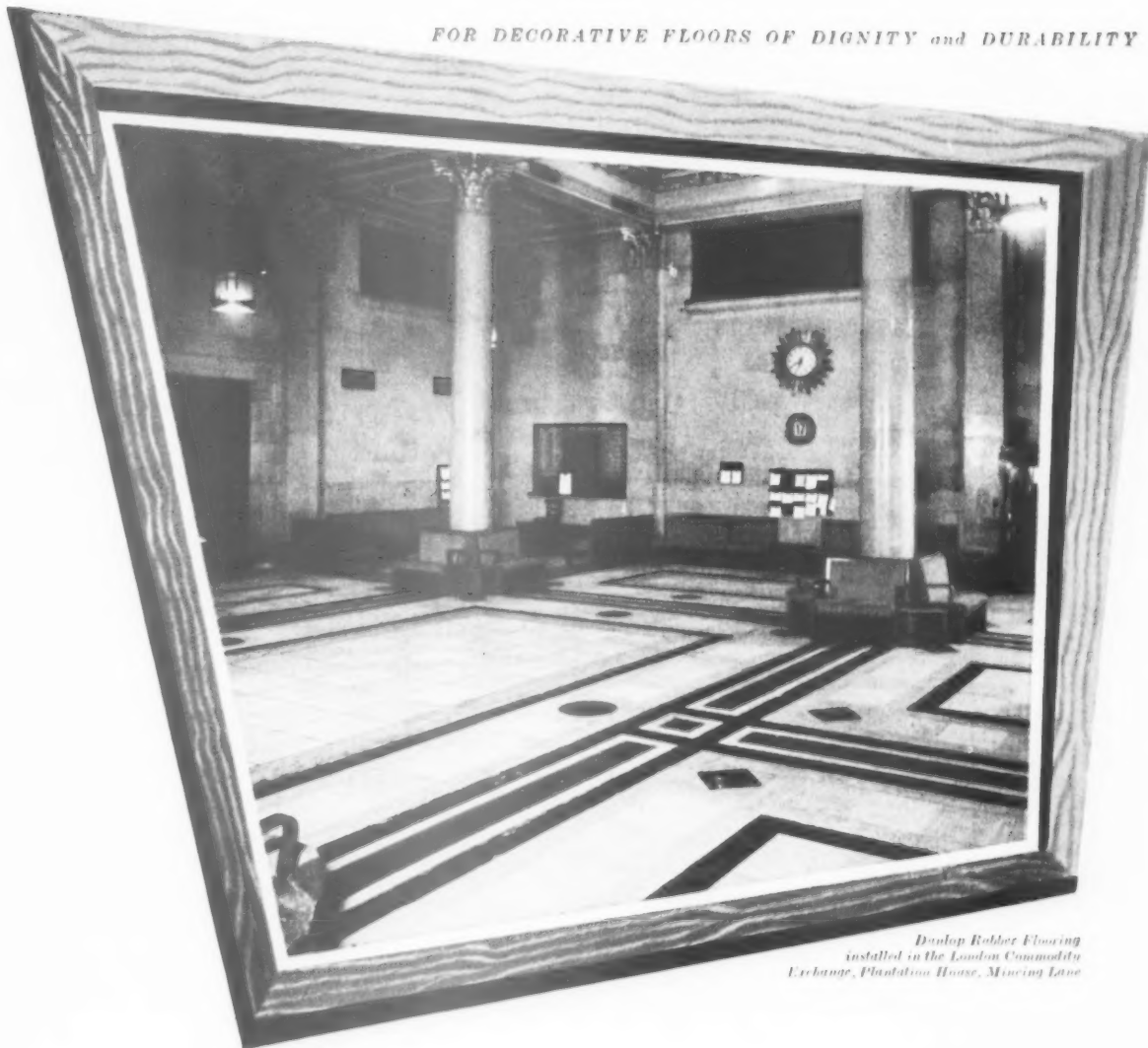
Discussion had also centred round the use of planning grids in the design of buildings for different purposes and in different sorts of construction. It had been said that they were more applicable to factories than to houses, and to light-and-dry construction rather than to the wet-and-heavy.

He did not think that the Society should be concerned very much with planning grids: it should avoid the presumption of laying down rules for design. Let the Society rather construct a frame of reference for the sizing of ready-made materials and components, offering it as information to designers to make use of in whatever way they found most advantageous. The Society should provide a dictionary (a classified list of modular components) and a grammar (a modular system), but it should not attempt to write the book.

It had been suggested by several speakers that the Society should launch out into a grand research into modular buildings. He did not agree with this. Research was not really the Society's business. Let the Society instead take full advantage of its peculiar asset, which was the experience and expert opinions of its own members, who already covered almost the whole range of interests involved. For the critical factor was not things, but people: the Society should ascertain what people versed in the arts of manufacture and design would be prepared to put to practical use in their work. There was a strong desire among such people to give modular co-ordination a trial, and he was confident that they could rapidly come to agreement upon a system to put to the test of practical application. He hoped that the next open discussion would take a long stride forward to such agreement.

* The American modular brick measures 8in by 4in on bed, by 3 courses rising 8in.

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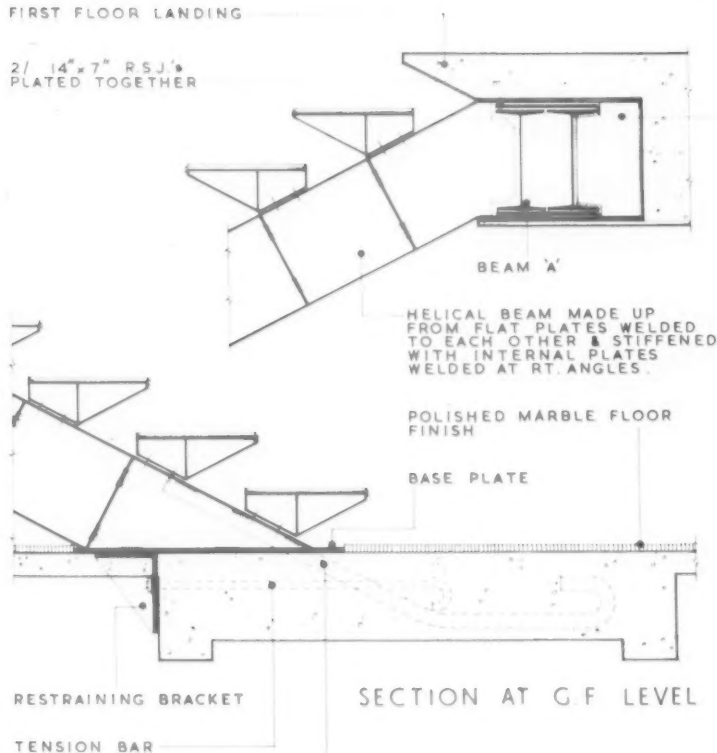
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SECTION AT G.F. LEVEL

2" Ø STEEL BAR WELDED TO TOP SIDE OF BEAM

BASE PLATE

UNDERSIDE OF BEAM

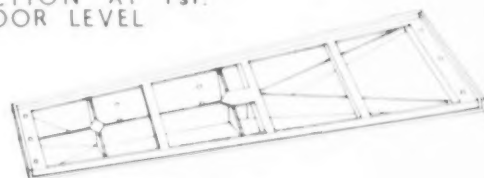
PLAN OF STAIRCASE
GROUND TO FIRST FLOORS

SCALE 1" = 4' 0"

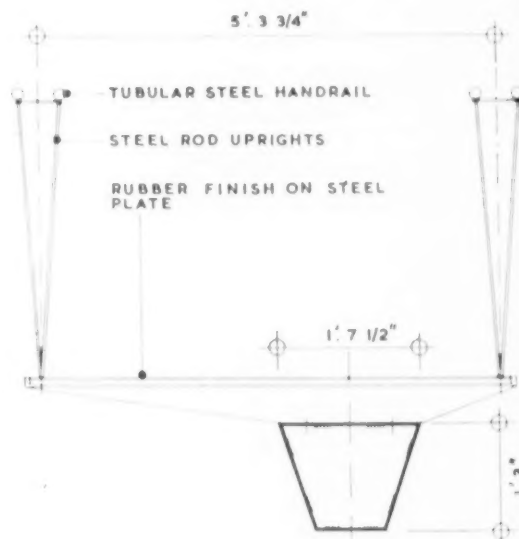
SCALE FOR SECTIONS 1" = 2' 0"

BEAM 'B' WELDED TO BEAM 'A'

SECTION AT 1ST.
FLOOR LEVEL



DETAIL OF CONSTRUCTION OF
STEEL TREAD



SECTION A-A &
ELEVATION OF TREAD

BEAM 'B'

EDGE OF FIRST FLOOR
LANDING

BEAM 'A'

HANDRAIL & BALUSTRADE

STEPS OF WELDED STEEL
MEMBERS FINISHED WITH
SHEET RUBBER TREAD

C/L OF BEAM

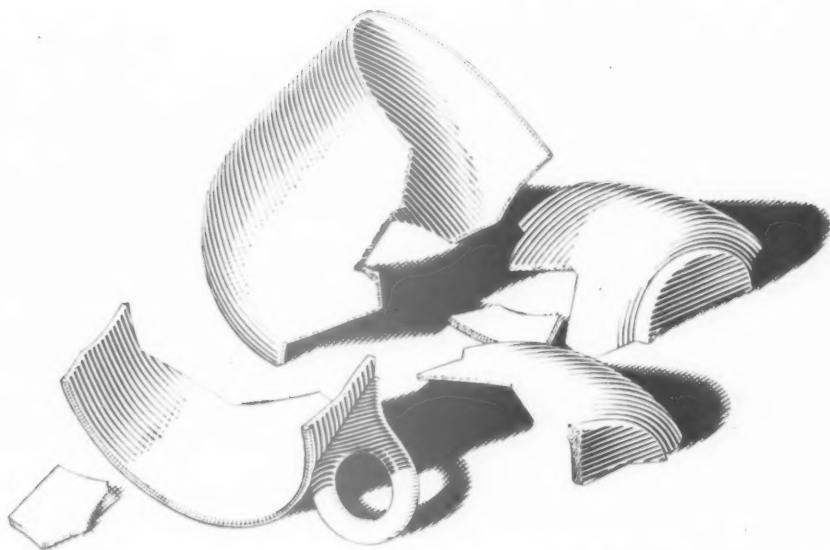
THIS STAIRWAY IS IN WELDED STEEL. IT IS
HELICOIDAL IN FORM, AND IS SITUATED IN
THE ENTRANCE HALL OF THE LABORATORY.
THE STRING OF THE STAIRCASE IS ABOUT
36' 0" LONG. THE STEEL HAS BEEN
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NOTE ALL DIMENSIONS HAVE BEEN
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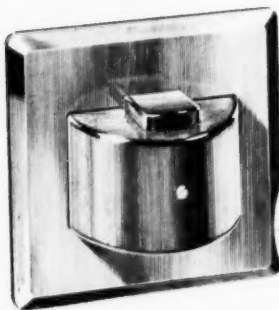
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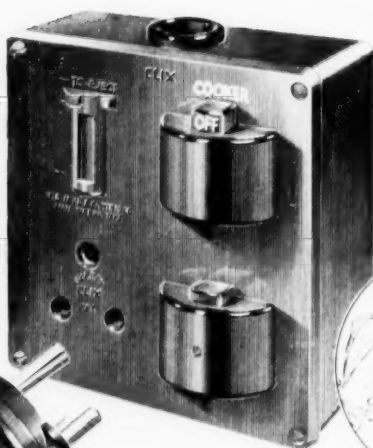
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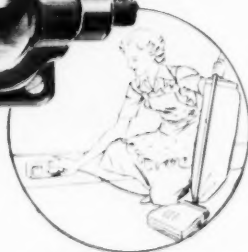


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Colour in Schools

THE recently published Ministry of Education Building Bulletin No. 9, *Colour in School Buildings* (H.M.S.O., 4s), is an extremely interesting document, both on the subject of colour generally and on colour for schools in particular. It is surprising, however, to find a Ministry of Education publication, primarily, it is assumed, intended to assist those responsible for school design and maintenance, entering so deeply into the subject as a whole rather than confining itself to what would seem to be a proper purpose of such a document, namely, to give simple guidance to school designers. Much of the Bulletin would seem more suited to a D.S.I.R. publication on the subject of colour for buildings, as it attempts to discuss the whole subject of application of colour and, in addition, to set out a range of colours for application to school buildings.

Furthermore, I doubt very much that it is a function of the Ministry of Education to attempt to establish a national basis for a colour reference system, to which so much of this publication is devoted; this is in fact a subject which is more suited to a body such as the British Standards Institution, which can bring together the main colour-using interests, which range much more widely than the painting of schools or even of buildings, the colour makers, the colour suppliers and the Colour Group of the Physical Society. If the Ministry of Education, the two county authorities mentioned and the Building Research Station felt that a colour range is necessary, as is suggested on pages 10 and 11 of the Bulletin, it would have been better if they had jointly approached the British Standards Institution with a proposal that a national reference system be agreed and that a system of national colour range for buildings should be prepared.

In any case it would have been preferable if the Ministry of Education had held its hand at this moment on the subject of colour in buildings as it must have been fully aware that the paint manufacturers, together with a number of important users, led by the R.I.B.A., are already trying to establish a range of colours for decorative purposes, which it is understood is ultimately to be issued as a new British Standards Institution decorative colour range. It seems most unwise for any one body, especially one which is not an actual user, to advocate colours which might later be found to fall outside the proposed standard range. To advocate the use of the Munsell system, while in my opinion excellent, may cause difficulties; it is an American publication, the copies of which are very expensive to buy in this country and involve the use of dollars, which seems a strange recommendation in a publication emanating from a depart-

ment of a Government which is constantly urging all of us to save dollars. Some of the colours in this range are not included in the less costly pocket edition of the Munsell Colour Range. What the Ministry of Education sets out to achieve in this publication might, in my opinion, have been equally well accomplished by giving the colour tabs shown, with the simple reference numbers but without the Munsell references. Had the Ministry of Education confined itself to the selection of a range of colours suitable for schools and informed designers how to use them, the Bulletin could have been halved in length thus saving official time and also public and private money. The Bulletin consists of 12 pages of main information but in addition there are 24 pages made up of seven Appendices of which only a portion has direct bearing on the selection of colours for schools.

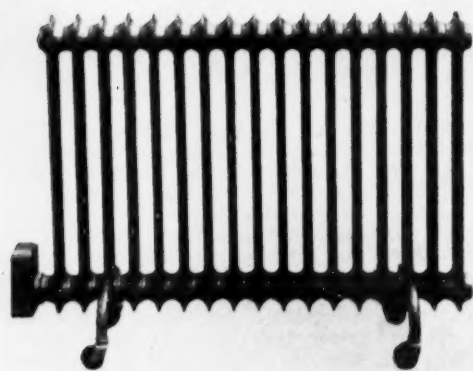
The subject of the proper use of colour is certainly one to which attention should be drawn but after reading the Bulletin one is left with a feeling that if all the recommendations, which are the views of a group of specialists with obvious leanings towards certain ranges of colour are carried out the cost of painting schools will be greatly increased or, alternatively, the contractors will find their tenders very unremunerative. I sincerely hope that tender documents will make clear when, in any one room, several colours are to be applied, as the painters' work is so greatly complicated if they have to use three or four separate colours with the attendant brush or spray cleaning. The "cutting-in," especially on small areas, of different colours adds enormously to the work. It is noted that, from Appendix 6 of the Bulletin, the London County Council is already aware of the work involved and includes a schedule of colours with its tender documents.

One is inclined to wonder whether this is not an example of specialists running away with themselves in an attempt to put over their specialist knowledge; if Diagram 9, which shows a small part of a cloak-room and circulation area of a school, is to be taken as typical, one is immediately led to ask whether in such circumstances the many colours, as appear to be indicated, are really necessary. Would children be less well educated or less safe if school cloak-rooms were to be painted in one colour, which would undoubtedly be less costly? Our school buildings tend to become more and more "clever" in design and finish but it is questionable whether these bright ideas contribute proportionately to the production of a better educated population; this statement may sound extremely reactionary but I believe we are beginning to suffer from going too far in our attempt to provide ideal conditions in

school buildings. I have yet to be convinced that some of our recently designed schools, including those decorated in many colours, will achieve better educational results than have been available from some of the less elaborate buildings (often finished in dirty cream distemper) of our older, and particularly our private (Public), schools. I have wondered once or twice lately if the Architects responsible for the decorations, both internal and external, of some of our recent schools have been back to see them two years after completion because I have had reason to revisit a number recently and in some of them the colours have changed very greatly and even the paint surfaces themselves have failed. A little more attention to the selection of reasonably light-fast colours and decent quality paint might have justified better the expenditure of the ratepayers' money.

The colour range illustrated in the Bulletin shows 47 colours, of which some will certainly not appeal to all designers. I feel that it is probable that the range will be considered by many users as inadequate to serve as a complete range, even for school building colours. It is very heavily loaded in respect of certain parts of the colour circle, such as the green-yellow and neutral groups, but is very thin in other ranges, such as the green group. This range is as much a fashion as the ranges which the authors of the Bulletin appear to be attempting to replace. I am not clear why the Bulletin should emphasize that the colours given are commercially available as from experience there has never been difficulty in obtaining any shade desired by architects. It is to be hoped that the authors have assured themselves that this range can be made in reasonably light-fast paints from pigments which are not too costly.

Like the authors of the Bulletin, I believe the Munsell system is the best and most useful colour reference system so far developed. A British Standard reference system for colour is long overdue and I understand that the Physical Society Colour Group is examining the problem which I hope will lead shortly to the British Standards Institution publishing a British reference system. It may be that the minor difficulties said to exist in the Munsell system could be eliminated during the preparation of a British system. The C.I.E. (Commission Internationale D'Eclairage) system is capable of defining colours quite precisely, when one can find someone to work the system but I gather these people hardly exist in this country outside N.P.L., The Paint Research Laboratory and one or two commercial laboratories. In any case it is not a system applicable to the day to day work of the architect. I am not sure that any reference system for colour is



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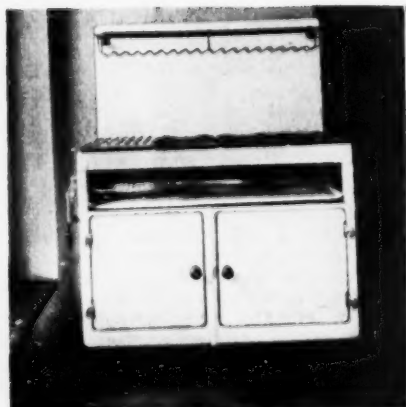
The tank capacity is 1 gallon which gives about 60 hours continuous burning.

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The height to the working top is 3 ft.

Finish is in cream vitreous enamel.

Colour in Schools

Continued from page 471

really necessary in the building field and the most useful guidance, in my opinion, would be the publication of the proposed new British Standards Institution range of standard colours; this would presumably give a range necessary to meet all normal demands.

Appendix 5 on the types of surface finish is quite helpful but I should like to disagree with the statement "the difficulty of measuring the degree of gloss in the paint trade makes it impossible to give an exact specification of what is meant by semi-gloss." I am sure there is no longer any real difficulty to agree a standard method of gloss measurement if the paint trade was willing to do so, but if rumours which I have heard are true the trade generally is opposed to the issue of nationally standardized methods of test.

Appendix 7 on the subject of terminology is useful as is also the Physical Society Report on this subject. It may interest readers to know that the B.S. Glossary mentioned as "in preparation" was published and reached me many weeks before the Bulletin; it is B.S.1611 "Glossary of Colour Terms used in Science and Industry" (British Standards Institution, 3s 6d).

INDUSTRIAL NOTES

● Olley Air Service, Ltd., Croydon Airport, Surrey, will operate an air link between the London and Birmingham sections of the 1953 British Industries Fair, to be held from April 27 to May 8.

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	Depart	
Croydon	9.45 a.m.	
Castle Bromwich	5.00 p.m.	
	Arrive	
Castle Bromwich	10.45 a.m.	
Croydon	6.00 p.m.	

● Mr. Bertram White, Technical Director of the Federation of British Industries, has resigned as from March 31, 1953, to take up an industrial appointment.

Dr. J. E. G. Harris, D.Sc.Lond., B.A. Cantab., will succeed him temporarily as Acting Technical Director. Dr. Harris had a long association with Imperial Chemical Industries, Ltd., from whose service he has now retired.

● New showrooms at 257-8, Broad Street, Birmingham, have been opened by Rowe Bros. & Co., Ltd., builders' merchants and catering equipment specialists. The occasion was marked by a gathering at the showrooms—with Mr. W. S. Shirra, divisional director of Rowe Bros., as host—of representatives of civic departments, the architectural profession, hotel management, nationalised and other large industries, industrial catering managers and others interested in the problems of public and industrial catering and kitchen planning.

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

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BUILDING

ALNWICK R.C. (a) 22 houses at Longhoughton. (b) Council's Clerk, Old Court Buildings, 34, Green Batt. (c) 2gns. (d) April 23.

BATH C.C. (a) 20 dwellings, Moorlands Estate. (b) City Planning Officer, 7, North Parade Buildings. (c) 2gns. (e) April 30.

BERKSHIRE C.C. (a) Secondary school at Park House, Andover Road, Newbury. (b) County Architect, Wilton House, Parkside Road, Reading. (c) 2gns. (e) April 30.

BERWICK UPON TWEED B.C. (a) 74 houses, Prior Park Estate, Tweedmouth. (b) Borough Surveyor, Municipal Buildings. (c) 3gns. (e) May 11.

BRIDGWATER B.C. (a) 58 houses, Sydenham Estate. (b) Borough Architect, Town Hall. (c) 2gns. (d) April 18, with details of labour force.

BRIGHOUSE B.C. (a) (Contract 37) 20 houses, (Contract 38) 10 houses, (Contract 39) 16 houses, (Contract 40) 15 houses, (Contract 41) 18 houses, (Contract 42) 13 houses, (Contract 43) 10 old persons' bungalows, and (Contract 44) 12 old persons' bungalows. (b) Borough Engineer, Town Hall. (e) April 30.

CHELMSFORD B.C. (a) Civil Defence garage at the Manor Road Depot. (b) Borough Engineer, Municipal Offices, Duke Street. (e) April 27.

CHERTSEY U.C. (a) 50 houses with outhouses, etc., at Bittams Lane/Little Green Lane. (b) Engineer and Surveyor, Council Offices. (c) 1gn. (e) May 4.

CHIPPENHAM B.C. (a) 23 aged persons' bungalows with service roads and sewers, Greenway Lane Estate. (b) Borough Surveyor, 10, Market Place. (c) 2gns. (e) May 11.

COVENTRY CORPORATION. (a) 39 shops, 101 flats and 5 maisonnettes, Willemhall Neighbourhood Unit. (b) Messrs. A. H. Gardner and Partners, 11, Eaton Road. (c) 3gns. (d) April 18.

DARTFORD B.C. (a) 50 dwellings and 8 garages, forming part of Scheme 5, Temple Hill Neighbourhood Unit. (b) Town Clerk, High Street. (c) 2gns. (e) May 4.

DENTON U.C. (a) 12 flats at Haughton Hall No. 1 site and 8 flats at Haughton Hall No. 2 site. (b) Engineer and Surveyor, Town Hall. (c) 2gns. (e) May 5.

FILEY U.C. (a) 2 blocks of 4 flats and a block of 2 shops with 4 flats above, Muston Road Estate. (b) F. Vaux, 31, Quay Road, Bridlington. (c) 2gns. (e) April 27.

GREAT YARMOUTH B.C. (a) 10 police houses and 2 aged persons' bungalows at four sites. (b) Borough Engineer, 8a, Queen Street. (e) April 27.

address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

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HAMPSHIRE POLICE AUTHORITY. (a) Police house and office, at Preston Candover, near Basingstoke. (b) County Architect, The Castle, Winchester. (c) Ign cheque payable to Treasurer of Hampshire Police Fund. (d) April 22.

HARPENDEN U.C. (a) 8 shops with maisonettes above Batford Estate. (b) Council's Clerk, Harpenden Hall. (c) Ign. (d) April 20. (e) May 25.

HEMEL HEMPSTEAD R.C. (a) Public conveniences at Post Office Footpath, King's Langley. (b) Engineer and Surveyor, 2, Marlowes. (c) 2gns. (e) April 27.

HEYWOOD B.C. (a) 114 houses, Egerston Street site. (b) Borough Engineer, Municipal Buildings. (c) 3gns. (e) May 2.

HEYWOOD B.C. (a) 12 houses, Barker Street. (b) Borough Engineer, Municipal Buildings. (c) 2gns. (e) May 2.

HORNCHURCH U.C. (a) 52 houses, Upminster Park Estate, Front Lane, Cranham. (b) Council's Surveyor, Council Offices, Billet Lane. (c) 2gns. (e) May 2.

ILKLEY U.C. (a) 32 houses at Menston; 8 at Woodlands, Ilkley; 16 flats at Menston; 24 flats at Valley Road, Ilkley. (b) A. Skinner, Chantry Drive. (c) 3gns. (e) April 25.

LINCOLN C.C. (a) Conversion to classrooms of cloakrooms at Kesteven and Grantham Girls' School. (b) County Architect, County Offices, Sleaford. (e) April 27.

LONDON—WOOD GREEN B.C. (a) 6 flats in a block at Winkfield Road, N.22. (b) Borough Engineer, Town Hall, N.22. (c) 2gns to Borough Treasurer. (e) April 27.

LOWESTOFT B.C. (a) Welfare centre and conveniences at Hamilton Road. (b) Borough Engineer, 49, High Street. (c) Ign. (e) April 29.

N. IRELAND—BELFAST C.C. (a) Conversion of Nissen-type hut to nursery school at Glenbank Drive, Crumlin Road. (b) Messrs. G. P. and R. H. Bell and R. F. Malcolmson, 26/27, Ocean Buildings, Donegall Square East, on production of receipt for deposit of £2 to Cashier's Office, Room 29, City Hall. (e) May 7.

N. IRELAND—BELFAST C.C. (a) Reinstatement of war damage at Strand Primary School, Strandburn Street. (b) Education Architect's Department, 40, Academy Street. (c) £2. (e) May 7.

N. IRELAND—CASTLEREAGH R.C. (a) 38 houses and flats with ancillary works, Old Dundonald Road. (b) Council's Clerk, Council Office, 51, Lisburn Road, Belfast. (c) £5. (e) May 8.

N. IRELAND—DOWN COUNTY E.C. (a) Meals kitchen at Holywood New Intermediate School. (b) Messrs. E. C. Harris and Partners, 1, Queen Street, Belfast. (c) 3gns. (e) May 7.

NORFOLK C.C. (a) 1 house at Buxton Lamas, 1 pair of houses at North Walsham, 3 houses at West Lynn, 1 staff house at Lingwood, for police. (b) County Architect, 27, Thorpe Road, Norwich, stating house or houses. (e) May 12 (staff house May 5).

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PUDSEY B.C. (a) (1) 40 flats on the Cemetery Road (North) site, (2) 22 flats on the Southroyd Park site, (3) 88 houses on the Cemetery Road (North) site (separate trades). (b) Borough Surveyor, Town Hall. (c) 2gns each trade. (e) April 27.

READING B.C. (a) 8 police houses, Bath Road Estate. (b) Borough Architect, Town Hall. (c) 2gns cheque payable to Corporation. (e) April 24.

SAFFRON WALDEN R.C. (a) (Contract No. 10) 12 houses and (Contract No. 11) 10 houses at Stansted Mountfitchet, Essex. (b) Council's Clerk, Council Offices, Debden Road. (e) April 25.

SALOP C.C. (a) Welfare centre at Dawley. (b) County Architect, Column House, London Road, Shrewsbury. (d) April 18, with details of resources (skilled labour and plant) contracts carried out and names of architects concerned.

SCOTLAND—HADDINGTON B.C. (a) Reconstruction of Town House, (Separate trades.) (b) Town Clerk. (e) April 21.

SCOTLAND—LOTHIANS AND PEEBLES JOINT POLICE COMMITTEE. (a) Police station at Garvald, East Lothian (separate trades). (b) County Architect, County Buildings, Haddington.

SEDGLEY U.C. (a) Alterations to the Council House. (b) W. M. Jones, The Limes, Dudley Road. (c) 2gns. (e) April 27.

SHIPSTON-ON-STOUR R.C. (a) 8 houses at Stretton-on-Fosse. (b) Messrs. E. H. Earp and Badger, Scholars Lane, Stratford-on-Avon. (c) 2gns. (e) April 20.

SOUTHAMPTON CO-OPERATIVE SOCIETY, LTD. (a) Alterations and additions to form dairy premises at 236, Shirley Road, Southampton. (b) General Manager, 122, St. Mary's Road. (c) 2gns. (d) April 22.

SOUTH KESTEVEN R.C. (a) 2 houses at Baston; 4 at Thurlby and 2 houses at Scotlethorpe (Edenham). (b) Council's Architect, Council Offices, 41, North Street, Bourne, Lincs. (c) 2gns. (e) April 29.

SOUTH KESTEVEN R.C. (a) 20 houses at Deeping St. James. (b) Council's Architect, Council Offices, 41, North Street, Bourne, Lincs. (c) 2gns. (e) April 29.

SOUTH SHIELDS B.C. (a) 529 houses and bungalows, block of 4 shops and flats and block of 7 garages with roads and sewers, West Simonside (contract completion period 24 months). (b) Borough Engineer, Town Hall. (c) 10gns. (e) May 5.

STONE R.C. (a) 58 houses at Eccles-hall. (b) Messrs. Hollins Jones and Oldacre, Lloyds Bank Chambers, Newcastle. (c) £2.

SURBITON B.C. (a) Public convenience at Hook Road. (b) Engineer and Surveyor, Council Offices, Ewell Road. (e) April 24.

THORNE AND DISTRICT WATER COMPANY. (a) Brick pump-house, etc., at the Pumping Station, Hatfield, near Doncaster. (b) Messrs. Fairbank and Son, St. Helen's Square, York. (c) 2gns. cheque payable to Company. (e) April 27.

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TOTNES B.C. (a) 22 houses, Pathfields Estate. (b) Borough Engineer, Municipal Offices. (c) 2gns. (e) April 25.

WANTAGE R.C. (a) (1) 6 houses at Childrey, 6 at Chilton, 5 at Compton, 22 at Hampstead Norris and 10 houses at Letcombe Regis and 2 site works for 8 Orilt bungalows at East Hanney. (b) Engineer and Surveyor, Council Offices, Belmont. (c) 2gns. (e) April 23.

WEST SUSSEX C.C. (a) Job No. 2380. Secondary school at Southbourne, near Chichester. (b) County Architect, County Hall, Chichester. (a) April 24.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

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BIRMINGHAM CORPORATION. (1) Ten storey flats. (2) Aston Hall Road. (3) W. J. Whittall and Sons, Ltd., Lancaster Street, Birmingham.

CITY OF LONDON CORPORATION. (1) Two blocks of dwellings. (2) Lancaster Street, Southwark. (3) H. Fairweather and Co., Ltd., St. James's Lane, London, N.10. (4) £65,577.

DUDLEY B.C. (1) 200 houses. (2) Tansley Hill Estate. (3) Henry Boot and Sons, Ltd., Banner Cross Hall, Eccleshall Road, Sheffield. (4) £289,956.

ESSEX COUNTY E.C. (1) Secondary school. (2) Chase Cross, Romford. (3) Barvis Partners, Ltd., 45, Queens Road, Brentwood, Essex. (4) £130,412.

CHELSEA B.C. (1) Shops and flats. (2) Kings Road. (3) W. H. Gaze and Sons, Ltd., High Street, Kingston-on-Thames. (4) £43,819.

GLOSSOP B.C. (1) 118 dwellings. (2) Pyegrove site. (3) G. A. Lomas and Co., Ltd., Bredbury, near Stockport.

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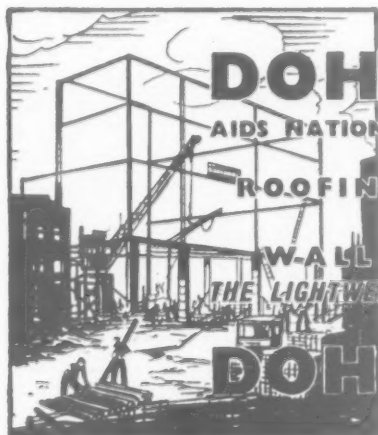
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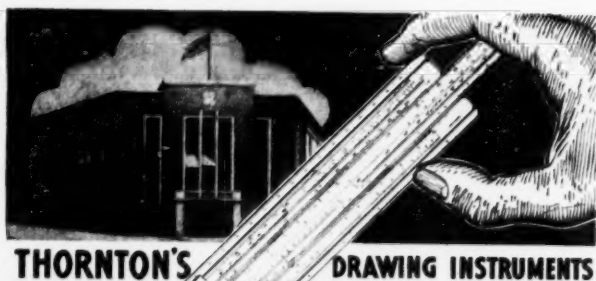
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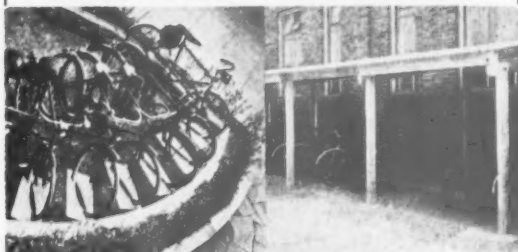
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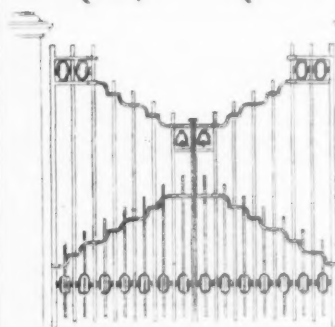
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CARLTON URBAN DISTRICT COUNCIL

ARCHITECTURAL ASSISTANT (HOUSING)

Applications are invited from Registered Architects for the above appointment, subject to the following conditions:

1. National Scheme of Conditions of Service.
2. Local Government Superannuation Acts.
3. Passing a Medical Examination.
4. Salary A.P.T. Grade V—£595 × 15 × 15 × 20 £645.
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Previous experience of house design and construction with a Local Authority will be an advantage.

Applications giving full details of education, qualifications and experience, together with names and addresses of three referees should reach me not later than noon on Friday, 8th May, 1953, endorsed "Architectural Assistant (Housing)."

A. E. F. WALKER,
Clerk of the Council.

Council House,
Burton Road,
Carlton, Nottingham.
30th March, 1953.

[7027]

BOROUGH OF WALTHAMSTOW COMMITTEE FOR EDUCATION.

ARCHITECT'S DEPARTMENT.

Applications are invited from Registered Architects for the following permanent appointment in the office of the Architect to the Committee, Mr. Frank H. Heaven, A.R.I.B.A., A.R.I.C.S.

CHIEF ASSISTANT ARCHITECT, at a salary of £760, rising by increments of £25 to £835 per annum (Grade VIII of National Scales).

In addition, a London Weighting (£30 if 26 years of age and over, or £20, if of age 21 to 25) is payable.

Applicants must be Associate Members of the R.I.B.A. or hold an equivalent qualification and have had considerable experience in a similar post of design construction and contract administration with a local authority. Experience in maintenance of buildings and control of staff would be an advantage.

Forms of application may be obtained from, and should be returned to, the undersigned within three weeks of the appearance of this notice.

E. T. POTTER,
Borough Education Officer.

Education Office,
Town Hall,
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[7025]

COUNTY BOROUGH OF ROTHERHAM.

APPOINTMENT OF CHIEF ASSISTANT ARCHITECT GRADE VIII.

Applications are invited for the above appointment in the Architect's Department in the office of E. J. Manson, B.Eng., A.M.I.C.E., Borough Engineer, at a salary in accordance with Grade VIII of the A.P.T. Division of Scales £760-£835.

Applicants must be Registered Architects and Associate Members of the Royal Institute of British Architects and have had considerable experience in design, construction and contract administration preferably with a local authority particularly in connection with housing schemes.

Applications, to be endorsed Chief Assistant Architect, stating age, qualifications, architectural training and details of experience together with copies of three recent testimonials, should be received by me not later than 5th May, 1953.

Canvassing will disqualify.

JOHN S. WALL,
Town Clerk.

Municipal Offices,
Rotherham,
10th April, 1953.

[7030]

APPOINTMENTS—contd.

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Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, giving briefly age, qualifications and experience. Mention the reference number shown against the post applied for.

[7024]

COUNTY BOROUGH OF ROCHDALE.

BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the under-mentioned appointments in the Borough Surveyor's Department:

- (a) ASSISTANT ARCHITECT, Grade A.P.T. (Va), Salary Scale £625-£685 per annum.
- (b) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. (V), Salary Scale £595-£645 per annum.

Applicants for (a) must be registered Architects and should be suitably qualified. Membership of the R.I.B.A. will be an advantage. They should have a thorough knowledge of architectural work with practical experience in the design of public buildings of all types.

Applicants for (b) must have passed the Final Examination of the R.I.C.S. (Quantities Section) and should have had considerable experience in the preparation of Bills of Quantities, measurement of site works and the preparation of Statements for Interim and Final Payments.

The appointments will be subject to the provision of the Local Government Superannuation Acts, and to the selected candidates passing a Medical Examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications stating position applied for, age, qualifications and full particulars of experience, together with the names and addresses of two persons to whom reference may be made, must be delivered to the Borough Surveyor, Town Hall, Rochdale, not later than Tuesday the 5th May, 1953. Envelopes endorsed "Assistant Architect" or "Assistant Quantity Surveyor."

K. B. MOORE,
Town Clerk.

[7026]

APPOINTMENTS—contd.

MINISTRY OF WORKS.

VACANCIES exist in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS with recognized training and fair experience. Vacancies are mainly in London. Successful candidates will be employed on a variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges and Housing.

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Apply in writing, stating age, nationality and full details of training and experience, to the Chief Architect, Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference W.G.10.C.A.1. [6891]

CONTRACTS

BOROUGH OF TOTNES.

ERECTION OF 22 HOUSES ON THE PATHFIELDS ESTATE, TOTNES, DEVON.

THE Corporation of the Borough of Totnes invites TENDERS for the erection of 22 HOUSES on the Pathfields Site.

Plans, Specification and Form of Tender may be obtained from Mr. Joseph Smith, M.Inst., Mun.E., etc., Borough Engineer, Municipal Offices, on payment of £2 2s, which will be returned on the receipt of a bona-fide Tender and the return of all documents.

Sealed tenders, in the envelope provided, to be delivered to the undersigned, not later than noon on the 25th day of APRIL, 1953.

The Corporation does not bind itself to accept the lowest or any tender.

GEORGE S. WINDEATT,
Town Clerk.

Municipal Offices,
Totnes,
Devon.

25th March, 1953.

[7031]

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ARCHITECTURAL Assistant required for rural practice in West Midlands, salary according to experience. Application stating age, experience, etc., to Box 6590. [7028]

SITUATIONS VACANT

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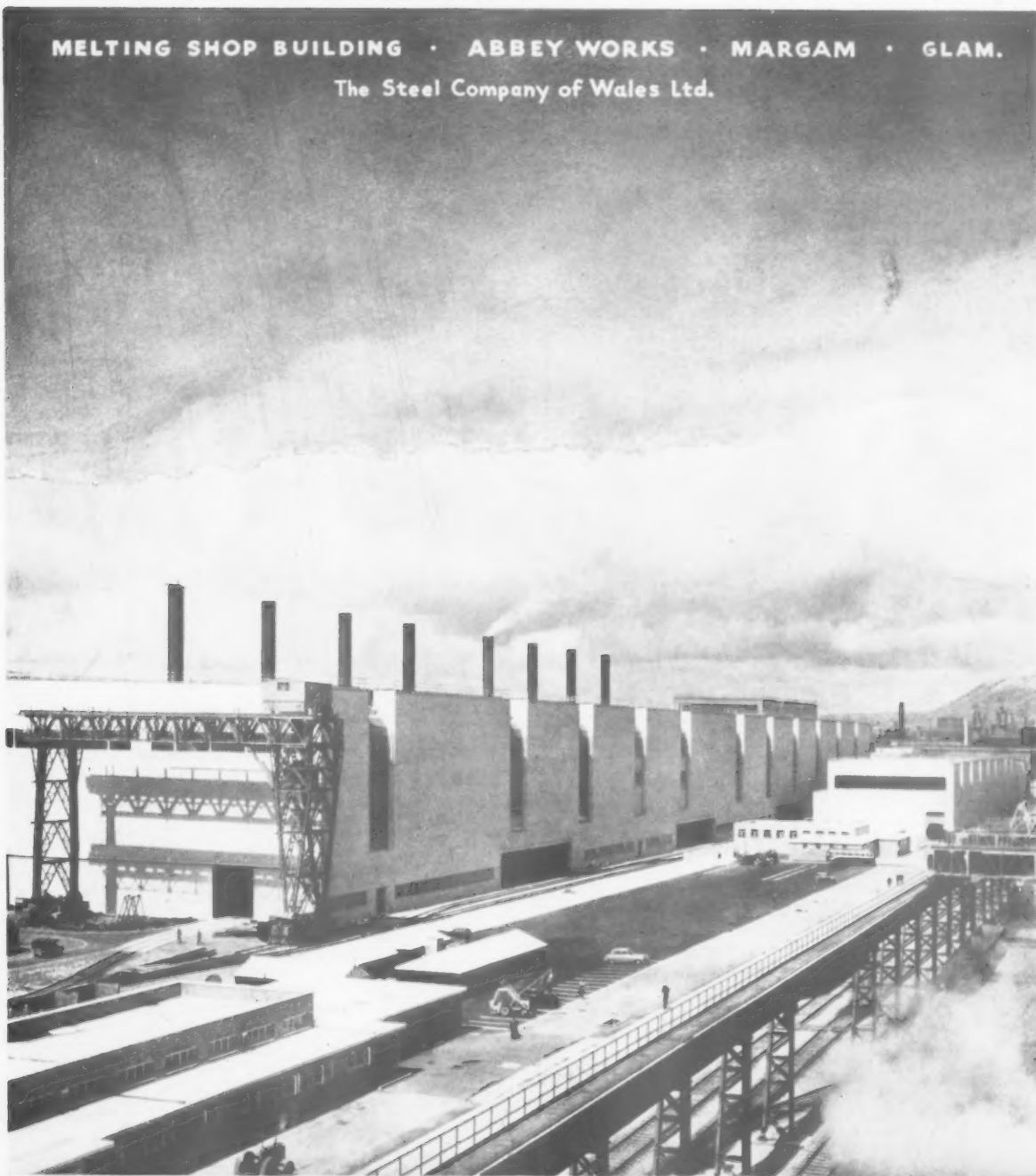
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